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EMBRACING SCIENCE, LITERATURE, ARTS, ETC.

BY

W. CHAMBERS, F.R.S.E., F.G.S.

PHILADELPHIA:
J. B. LIPPINCOTT & CO
EDINBURGH: W. & R. CHAMBERS.
1869.

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PREFACE.

The present work, Miscellaneous Questions, and a companion, though distinct, work of similar construction, entitled Historical Questions, are designed to fulfil an important purpose in Education—that of bringing clearly into view the leading facts which are supposed to be gained through a long course of instruction. Without proposing to supersede the elementary books usually employed, they offer a certain test of what is presumed to have been previously learned. With the two works in their hands, Schoolmasters, Tutors, Governesses, or Parents, may at once satisfy themselves respecting the degree of knowledge on a variety of subjects attained by the young persons under their charge, and for whose intellectual culture they feel a special interest. At the same time—in this age of Competitive Examination—the works offer to candidates for Official Appointments the means of readily and perspicuously calling to remembrance answers to such questions in

History, Science, Art, Literature, and Knowledge generally, as are likely to be asked of them; thereby, perhaps, saving the reperusal of a multiplicity of books which they would otherwise have to consult and patiently study.

As regards the Answers to the Questions, every effort has been made to render them brief and of easy acquisition, in regular consecutive order according to subjects; while the facts they present, based on the most recent authorities, are just those which, from their interest and importance, are expected to be less or more borne on the mind of every 'well-informed person' of either sex.

W. C.

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CHAMBERS'S

MISCELLANEOUS QUESTIONS.

Astronomy.

1. *State the origin or Great First Cause of all things*—God, the Creator and Preserver, by whose good Providence we live, and move, and have our being.

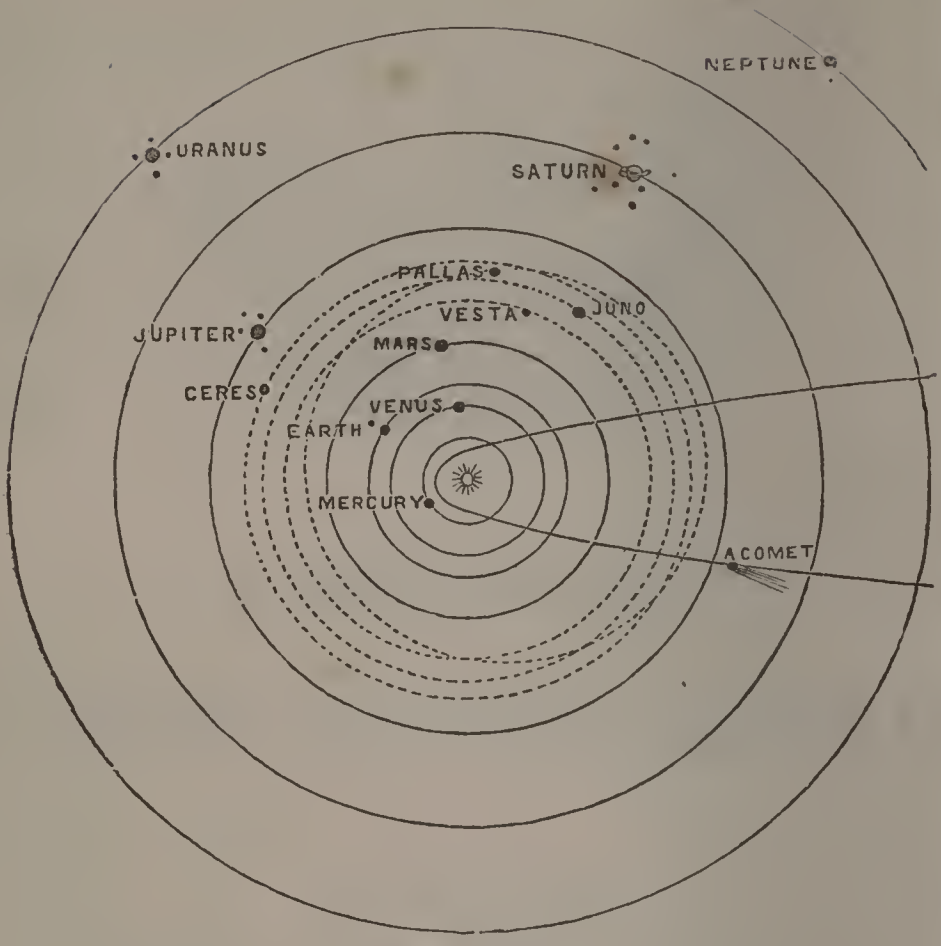
2. *What is the term ordinarily employed to signify the Creator and His works?*—A common expression is Nature; we also speak of the Laws of Nature.

3. *How can we learn what are the Laws of Nature?*—By studying various branches of science, such as Astronomy, Natural Philosophy, Botany, Zoology, Chemistry, and the like.

4. *What does astronomy teach?*—The nature and motions of the heavenly bodies, including our Earth.

5. *Is that an ancient science?*—Yes; but it has been greatly improved in modern times.

6. *What were the notions generally entertained among ancient nations respecting the heavenly bodies?*—Anciently it was believed that the earth was a fixed body, around which the sun, planets, and stars revolved at different distances.



Solar System.

7. *What has been found to be the true explanation?*—That the sun is a central body, round which the earth and other planets revolve, the whole forming the Solar System.

8. *How many planets are there?*—More than ninety; the principal ones are eight in number—namely, Mercury, Venus, the Earth, Mars, Jupiter, Saturn, Uranus, and Neptune.

9. *What are the planets?*—Like the earth, they are all thought to be worlds, deriving light and heat from the sun.

10. *Are the eight principal planets all of one size?*—No; they greatly differ in size—Jupiter is the largest.

11. *Are the stars in our solar system?*—No; they are situated far beyond it.

12. *What are the stars?*—The stars are suns, at an inconceivable distance from the earth, and are believed to have planets revolving round them.

13. *How do we know a planet from a star?*—The planets shine with a steady lustre, while the stars twinkle.

14. *Mention another distinction.*—The planets are seen to change their places among the other heavenly bodies, but the stars have seemingly each a fixed place in the heavens, and are accordingly called fixed stars.

15. *Is it not usual to call the planets stars?*—In a general or wide sense, all the smaller heavenly bodies are called stars.

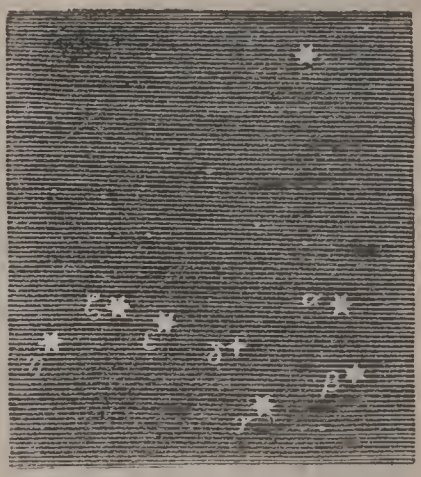
16. *Give an example.*—Venus is spoken of as a morning or evening star, according to the time of its appearance ; and the same is said of Jupiter.

17. *Are the planets distinguishable by any particular colour?*—Venus is a pure sparkling white ; Mercury, a dullish blue ; Saturn, a reddish tinge ; Mars, a fiery red ; Jupiter, white. The most brilliant of the whole are Venus and Jupiter.

18. *Why do we not see the stars during the day?*—Because they are lost in the blaze of sunlight.

19. *How are the stars arranged?*—For convenience of description, astronomers group them in constellations.

20. *Mention a well-known constellation.*—The cluster of stars called Ursa Major, or the Great Bear, but which is familiarly known as the Plough.



The Constellation of the Plough, and North Star.

21. *Where is the constellation Ursa Major seen?*—In the northern part of the heavens.

22. *Mention another constellation.*—There is one called Orion, from a fabulous hero of antiquity ; three stars in a straight line in this constellation are called Orion's Belt.

23. *Is there any other noted constellation?*—One, consisting of four stars, is called the Southern Cross, but it is not seen in the northern part of the world.

24. *How can we learn the names and situations of the constellations?*—By studying celestial globes and maps on which they are pictured.

25. *There is a star called the North or Pole Star; how do we know it?*—The North Star is situated nearly due north, and is nearly in line with two stars in the Great Bear or Plough, usually called the Pointers.

26. *Of what service is the north star?*—At night it is useful in guiding travellers and mariners, by shewing them the northerly direction.

27. *Which is the largest and brightest of all the stars?*—Sirius, otherwise called Canicula or the Dog-star.

28. *Where is Sirius situated?*—In the constellation Canis Major, or the Great Dog, below the feet of Orion.

29. *What was at one time believed respecting the Dog-star?*—That it caused particularly hot weather for a number of days in summer, which, from that circumstance, were called the Dog-days.

30. *Is that belief exploded?*—Entirely so. People yet speak familiarly of the Dog-days; but it is now known that though the star appears in summer, it has no influence on the weather.

31. *A broad white streak is seen in the sky at night; what is it called?*—It is called the Galaxy or Milky-way.

32. *Of what does it consist?*—The Milky-way is composed of stars, but at so remote a distance that they appear only as a luminous haze in the firmament.

33. *What is meant by firmament?*—It is a term signifying the vast expanse of sky visible from the earth.

34. *Is there any other phrase employed?*—Yes; we say 'the canopy of heaven,' from its resemblance to a great rounded canopy overhead.

35. *What is the colour of the firmament?*—In clear weather it appears to be blue; but the blueness is chiefly an effect of vapour in the air; for the drier the air is, the blue is always the darker; and, in very dry climates, and on the tops of high mountains, it becomes almost black.

A Comet.

36. *What does the solar system include besides the planets?*—It includes comets, and also satellites.

37. *What is the appearance of comets?*—A comet usually resembles a star with a long streaming tail.

38. *Are there many comets?*—There are many hundreds, but they are seldom seen from the earth.

39. *What is the motion of comets?*—They travel in all directions; sometimes approaching the sun, and at other times going far into space.

40. *What is their nature?*—They are generally composed of a light matter, through which the stars can be seen.

41. *When comets appear, do they injuriously affect the earth?*—They are not found to do any injury, and are believed to fulfil some useful purpose in creation.

42. *What are satellites?*—They are bodies attending on or revolving round planets; they are sometimes called secondary planets.

43. *Are there many satellites?*—Jupiter has four, Saturn has eight, Uranus has four, our earth has one, and Neptune has one.

The Moon, photographed.*

44. *What do we call our satellite?*—The Moon.

45. *Is not the sun, as a central body, very much larger than any of the planets?*—Yes; very much larger. It is one million four hundred thousand times greater than the earth.

46. *What is the size of the earth?*—Its diameter at the equator is 7925 miles, and its circumference or girth is 24,900 miles.

47. *What is the earth's distance from the sun?*—Nearly ninety-two millions of miles.

48. *What is the size of the moon?*—Its diameter is only 2160 miles, or little more than a fourth of the diameter of the earth.

49. *What is the shape of the earth?*—It is a round ball or globe, shaped like an orange, being a little thicker when measured across the equator than from pole to pole.

50. *Has it the appearance of a globular body?*—No; to ordinary observation it appears like a level plain.

* Copied by permission of Messrs Smith, Beck, and Beck, from Warren De la Rue's photograph.

51. *How do we know it is round?*—By looking to the sea on a clear day, when we see the tops of approaching vessels first appear, and gradually the lower parts.

52. *Standing on the shore, how far can you see along the surface of the ocean?*—At most from eight to nine miles.

53. *Are all the planetary bodies round?*—Yes; they are all globular in form, and so are the satellites.

54. *What sustains the planets in the heavens?*—They are sustained in their appointed courses by two contending forces, one drawing them towards the sun, and the other urging them in a direction that would carry them away from the sun.

55. *How were these forces impressed on them?*—These forces were impressed on them by the Creator, and are among the most wonderful of His works.

56. *Give an example of the drawing forces.*—When an object falls to the ground, it is because the earth, as the larger body, draws the small one to it.

57. *What is this drawing force usually called?*—It is called gravitation.

58. *Give an example of the other force.*—When a carriage-wheel goes rapidly round on a wet day, it throws sparks of dirt from it. In the same manner, a grinding-stone whirling in contact with water throws off a shower of spray.

59. *What is this repelling force ordinarily called?*—It is called centrifugal force—that is, the impulse to fly from the centre.

60. *Where in Scripture are we reminded that the earth is unsupported in empty space?*—Job, speaking of the power and goodness of God, says: 'He hangeth the earth upon nothing.'

61. *How do gravitation and centrifugal force act in the case of the satellites?*—Just as the earth revolves round the sun, so do the satellites revolve round their respective planets.

62. *Explain how the sun appears to rise in the morning, to wheel over the earth, and set in the evening.*—This is only a deception of the senses; it is the earth that is in reality turning round, but we can neither see nor feel it moving.

63. *Mention a familiar example of this kind of deception.*—When we are gliding smoothly along in a railway-train, we are apt to think that the fields and other objects are moving past us.

64. *But we speak of the sun rising and setting, and say the same thing of the moon.*—These are only convenient phrases; all that is now meant by them is, that the sun or moon *seems* to rise and set.

65. *What are the motions of the earth?*—The earth has two distinct motions; it rotates on its own axis, and it revolves round the sun.

66. *What is meant by rotating on its axis?*—That it goes round in the manner of a ball on a spindle.

67. *What time is occupied by this rotation?*—Twenty-four hours, which form a day.

68. *What is this motion ordinarily called?*—The diurnal motion.

69. *Describe the diurnal motion.*—The diurnal motion is from west to east. In the morning, the darkened portion of the earth turns towards the sun, which then seems to rise, and daylight ensues. In the evening, that part of the earth which was in the west sinks in the east, and there is darkness by the apparent setting of the sun.

70. *Then, the sun is always shining on some part of the earth?*—Yes; the sun lights up different parts in turn; when it is morning with us, it is evening somewhere else; when we are sleeping in the darkness of night, others are in the blaze of noonday.

71. *What is signified by noon?*—Twelve o'clock at mid-day, when the part of the earth we are upon is most fully opposite the sun.

72. *What is that position of the sun relative to our part of the earth called?*—The sun is said to be on our meridian.

73. *What length of time does the revolution of the earth round the sun occupy?*—365 days, 5 hours, 48 minutes, and 49 seconds, which form a solar year.

74. *What is caused by the annual revolution?*—The change of seasons, Spring, Summer, Autumn, and Winter, according to the relative position of the earth and the sun at different periods.

75. *What is meant by the orbit of the earth?*—It is the path which it traverses in its annual revolution.

76. *What is the form of this orbit; is it a circle or an oval?*—The earth's orbit is of an oval form.

77. *In going round the sun, what is the posture of the earth?*—

The earth's axis does not stand perpendicular to the plane in which its orbit lies, but has a slight obliquity or inclination; it always, however, keeps nearly the same inclination, and for a long period points sensibly in the same direction.

78. *What is the consequence of this position of the earth's axis?*—That the several parts of the earth are more turned towards the sun at one part of the orbit than at another, and thus experience a change of seasons, and a difference in the length of days and nights.

79. *If the earth's axis were perpendicular to the plane of its orbit, what would ensue?*—There would be no change of seasons; but a belt of the earth round the middle, between the two ends of the axis, would have perpetual summer; while the parts towards the ends would suffer perpetual winter.

80. *What are the ends of the axis called?*—The North and South Poles.

81. *What is the meaning of the term pole?*—It is a Greek word, signifying a pivot or turning-point.

82. *What is the ecliptic?*—It is an imaginary circle which the sun appears to traverse in the heavens in the course of a year, in consequence of the earth's motion in its orbit.

83. *What is the equator?*—It is an imaginary line round the middle of the globe, midway between the two poles.

84. *How is the ecliptic situated with respect to the equator?*—The ecliptic crosses the equator in a slanting or oblique direction at two points, so that one half of it is to the north of the equator, and the other half to the south.

85. *What are the two crossing points called?*—The equinoxes, or equinoctial points; because when the sun is in these points, the days and nights are equal all over the earth.

86. *How far does the sun ever recede north or south from the equator as he travels in the ecliptic?*—To a distance depending on the obliquity of the earth's axis, which is rather more than one-fourth of the distance of the equator from the pole.

87. *How are these distances marked on globes and maps?*—By two lines or circles: the one to the north being called the Tropic of Cancer, and the one to the south the Tropic of Capricorn.

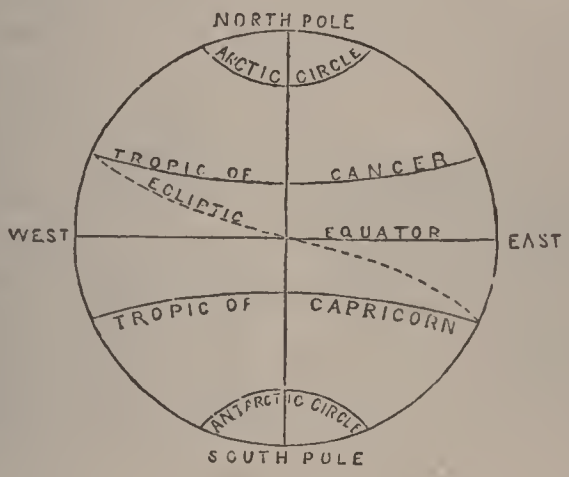
88. *What are the Arctic and Antarctic Circles?*—Two imaginary lines round the globe, at the same distance from the poles that the tropics are from the equator.

89. *How do these circles divide the earth's surface?*—Into five

belts or regions, called zones, distinguished by differences of climate.

90. *Which is the warmest region?*—That lying between the two tropics, called the torrid zone.

91. *Explain the reason.*—Because the sun's path lies within the region of the heavens exactly opposite; twice a year he is



exactly overhead, and is never vertically above any other part of the earth's surface; so that his rays, here falling perpendicularly, or nearly so, give the earth the full benefit of their heat.

92. *In what parts of the earth is the temperature generally most moderate?*—In the two belts called the Temperate Zones, lying on opposite sides of the torrid zone, and between it and the polar circles.

93. *Why?*—Because the rays of the sun always fall obliquely, and thus produce less heat than in the torrid zone.

94. *What are the regions within the Arctic and Antarctic Circles called?*—The Polar Regions, or Frigid Zones.

95. *Why?*—Because as the earth goes round in its annual motion, the obliquity of its axis causes each pole to be completely turned away from the sun, so that the sun never rises for months together, and during the whole of this period the climate is intensely cold. However, for a few months annually, the poles are constantly turned towards the sun, so that it never sets.

96. *Is there not great heat during the time that the sun never sets?*—No; for it only goes round and round the lower part of the sky, and never rises high enough to produce much effect, or be able to melt the ice and snow formed during the long winter.

97. *There is an imaginary belt or zone in the heavens embracing the ecliptic, what is it called?*—It is called the Zodiac.

98. *How has the zodiac been represented?*—It has been divided into twelve parts, each marked by a sign or pictorial figure, representing a constellation.

99. *What are the signs of the zodiac?*—They are known by Latin names—Aries, Taurus, Gemini, Cancer, Leo, Virgo, Libra, Scorpio, Sagittarius, Capricornus, Aquarius, Pisces.

The Signs of the Zodiac.

100. *These names have been translated and put into rhyme, for the sake of fixing them in the memory. Repeat the rhyme.*

The Ram, the Bull, the heavenly Twins,
And next the Crab the Lion shines,
The Virgin and the Scales,
The Scorpion, Archer, and He-Goat,
The Man who holds the watering-pot,
And Fish with glittering tails.

101. *What is the use of these signs of the zodiac?*—They serve to indicate the apparent situation of the sun in the heavens at any particular time of the year; we speak of the sun entering Aries, and so on.

102. *What is the substance of the moon?*—It is believed to consist of rocks and other opaque materials.

103. *If the moon be opaque, how should it give any light?*—It gives only a reflected light, or a portion of that which it receives from the sun shining upon it.

104. *What are the dark and luminous streaks and spots in the moon?*—They are mountains, valleys, and shadows. The more brilliant parts are the mountain-tops; the darker streaks are the deep valleys.

105. *Is the moon believed to be inhabited?*—No.

106. *What are the motions of the moon?*—It has three

motions; it revolves on its own axis; it revolves round the earth; and, along with the earth, it revolves round the sun.

107. *What space of time does it take to revolve on its axis?*—Exactly the time it takes to revolve round the earth; 28 days, 7 hours, 43 minutes, and 11 seconds.

108. *What is this time called?*—A lunar month, from *luna*, a Latin word for the moon.

109. *What is the result of the moon taking the same time to go round on its axis as to revolve round the earth?*—That we never see more than one side of it.

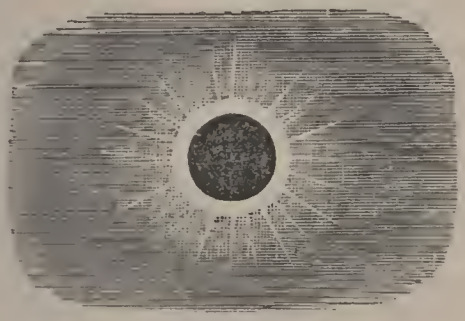
110. *What else is remarkable about the moon?*—Its changes of appearance, or phases, in its monthly circuit.

111. *State the chief phases of the moon.*—At new moon it is invisible; it appears as a half-moon at the end of the first, full moon at the end of the second, decreasing to half-moon at end of the third, and disappearing at the end of the fourth quarters.

112. *What is its appearance during its first and last quarters?*—It has an elegant crescent-like appearance.

113. *What is that dim appearance of a moon which is sometimes seen lying within the crescent of new-moon?*—The darkened part of the moon faintly visible by the sunlight reflected from the earth upon it.

114. *What causes an eclipse of the moon?*—The interception of the sun's light by the earth; the darkness which creeps over the moon being the earth's shadow.



An Annular Eclipse of the Sun.

115. *What causes an eclipse of the sun?*—The passing of the moon between the earth and the sun.

116. *To what extent do eclipses vary?*—Sometimes they are very partial, as when only the edge of the moon or sun is darkened; and sometimes they are complete.

117. *What is an annular eclipse of the sun?*—When the moon covers the face of the sun, excepting the edge all round, so as to leave a ring of light.

118. *Why is it called annular?*—From *annulus*, the Latin word for a ring.

119. *Do the moon, planets, and stars exercise any influence over human affairs?*—No; eclipses and certain positions of the planets were at one time thought to portend good or evil; but all such notions are found to be visionary.

120. *Was there not a class of persons who pretended to tell fortunes by the stars?*—Yes; they were called Astrologers. In the present day no intelligent person believes in fancies of this kind.

121. *Has the moon any influence over insanity?*—Formerly there was a belief to that effect, and hence the term lunacy; now this belief is abandoned, though the words lunacy and lunatics remain in use.

Geography.

1. *What is taught by Geography?*—A knowledge of the surface of the earth.

2. *What is the extent of the earth's surface?*—About 200,000,000 of square miles, about two-thirds of which are occupied by water, leaving only one-third for dry land.

3. *Into what is the land divided?*—Into continents and islands.

4. *What are continents?*—Very large stretches of land, of which there are strictly only two—one comprising Europe, Asia, and Africa, and the other consisting of North and South America. But it is customary to regard Europe, Asia, Africa, and the two Americas as separate continents.

5. *What are islands?*—Portions of land, of lesser or greater size, surrounded by water.

6. *Mention some of the principal islands?*—Australia, Tasmania, New Zealand, Ceylon, Borneo, Java, Mauritius, New Guinea, Madagascar, Cuba, Jamaica, Madeira, Great Britain, Ireland, Newfoundland, and Iceland.

7. *Into what are the waters on the globe divided?*—Into oceans, seas, lakes, and rivers.

8. *What is an ocean?*—A large extent of sea.

9. *Give some examples.*—The sea which separates Europe and Africa from America is called the Atlantic Ocean; America is divided from Asia by a larger sea, called the Pacific Ocean; and there are also the Northern and Southern, and Indian Oceans.

10. *Give some examples of seas?*—The Mediterranean, which lies between the south of Europe and Africa; the Red Sea,

MAP OF THE WORLD.

which lies between a part of Africa and Asia; and the Baltic, which lies in the north of Europe.

11. *What is a portion of land nearly surrounded by water called?*—A peninsula.

12. *What is a point of land jutting out into the sea called?*—A cape or promontory.

13. *What is a bend of the sea into the land called?*—A bay or gulf.

14. *What is a narrow connecting portion of sea called?*—A strait or channel.

15. *Mention some of the features of the land.*—Mountains, hills, plains, and valleys.

16. *Name some well-known mountains.*—The Alps, which bound the north of Italy; the Pyrenees, between France and Spain; the Rocky Mountains, in North America; the Andes, in South America; and the Himalaya Mountains, in India.

17. *What is a hemisphere?*—A hemisphere is half a globe. On maps the globe is usually represented in two hemispheres—the Eastern Hemisphere, in which are Europe, Asia, and Africa; and the Western Hemisphere, in which are North and South America.

18. *What enables us to tell the position of any place on the globe?*—A knowledge of its latitude and longitude.

19. *Explain degrees of latitude.*—The earth, from each side of the equator to the pole, has been divided into 90 spaces, called degrees of latitude—90 north and 90 south.

20. *What is the extent of one of these degrees?*—About 69½ English miles.

21. *How are these degrees marked on maps?*—By lines drawn parallel to the equator, with figures at their extremities stating the degree of each.

22. *How is a degree divided?*—Into minutes and seconds.

23. *What are degrees of longitude?*—They are spaces reckoning east and west.

24. *From what point are degrees of longitude measured?*—In the United Kingdom they are measured from Greenwich, near London—so many to the east, and so many to the west.

25. *Give an example in defining the situation of a place.*—Edinburgh is situated in 55 degrees, 57 minutes, 20 seconds north latitude; and 3 degrees, 10 minutes, 30 seconds west longitude.

26. *Mention a shorter way of expressing degrees, minutes, and seconds.*—Certain markings are used—as a small ° for degrees, a single point ′ for minutes, and two points ″ for seconds.

27. *Where is this kind of measurement of special service?*—It is of great service to mariners in performing voyages across the ocean. By knowing the exact latitude and longitude of their ship, they are able to steer their course to the desired port.

28. *How can they tell where they are?*—By astronomical observations taken by means of certain instruments.

29. *What instrument used by mariners always points northwards?*—The Mariner's Compass, which consists of a magnetised needle or slip of metal poised so as to turn freely in all directions.

The Mariner's Compass.

30. *What makes the needle point northwards?*—An attractive influence exercised by the earth, the cause of which remains one of the mysteries of nature.

31. *How many points are there in the mariner's compass?*—There are four cardinal points, North, South, East, and West; and twenty-eight intermediate points, such as north-east, north-west, and so on.

32. *Does the needle point due north?*—No; it points a little west of north, and shifts in a manner necessary to be known by sailors.

33. *How are the cardinal points situated on a map?*—The upper part of the map is the north; west is on our left, and east on our right hand; and south is at the bottom.

34. *What do maps usually represent?*—They shew countries with their principal mountains, rivers, cities, and towns; also the ocean-boundaries of the greater divisions of the globe.

35. *What is the largest river in the world?*—The Amazon, in South America, which is 4000 miles long and 150 miles broad at the mouth, and which is navigable for 3360 miles.

36. *Mention some large rivers in North America.*—The Mississippi, Missouri, Ohio, and St Lawrence are well known for their vast size, but there are many others.

37. *Mention two well-known rivers in Ireland.*—The Shannon and the Liffey.

38. *Mention some beautiful lakes in Ireland.*—The Lakes of Killarney.

39. *What are the principal rivers in Europe?*—The Rhine, Rhone, Danube, Seine, Volga, Don, Dnieper, Elbe, and Tagus.

40. *What are the principal rivers in Great Britain?*—The Thames, Severn, Humber, Tyne, Mersey, Tweed, Clyde, and Tay; but all these are insignificant in comparison with the great American rivers.

41. *Mention some large lakes in North America.*—Superior, Huron, Michigan, Erie, and Ontario.

42. *Mention some grand falls of water in North America.*—The Falls of Niagara.

43. *What is the nature of the water of the ocean?*—The water of the ocean, and all the seas connected with it, is salt, and unfit for drinking; by evaporation, table-salt is made from it.

44. *How deep is the ocean?*—In the Atlantic and several other places, the ocean is some miles in depth; it generally becomes shallow towards the shore.

45. *Is the ocean at rest?*—No; the ocean and the seas and bays connected with it are constantly agitated by tides.

46. *Explain the nature of the tides.*—They consist of an alternate rising and falling of the water. In rising, the water is said to *flow*, and in falling to *ebb;* it flows and ebbs twice in about twenty-five hours.

47. *Are the tides regular in their action?*—No; in the space of about fifteen days there is a particularly high or *spring* tide, and a very low or *neap* tide.

48. *What causes the tides?*—The combined action of the sun and moon, but more particularly the moon.

49. *Does the water rise equally high everywhere at the same time?*—No; the tides begin to rise in the ocean, and reach the lesser seas and bays, later according to circumstances; but there is this remarkable thing about the tides, that when it is high water at a place on one side of the globe, it is high water at the place exactly opposite to it on the other.

50. *What sea is noted for having very little tide?*—The Mediterranean, in consequence of the narrow inlet from the ocean at the Straits of Gibraltar.

51. *What agitates the ocean besides the tides?*—The ocean is much affected by winds, and also by currents which flow in different directions.

52. *Mention a remarkable current.*—The Gulf Stream, which flows from the Gulf of Mexico on the coast of America. It divides into two currents, one of which flows towards the north-western shores of Europe, and, by its warmth, greatly modifies the severity of winter.

53. *When opposite currents meet or encounter rocks, what ensues?*—Whirlpools, which are in some places dangerous to mariners.

54. *Mention two remarkable and dangerous whirlpools.*—Charybdis in the Straits of Sicily, and the Mälstrom on the coast of Norway.

55. *Has any nation an exclusive property in the ocean?*—No; it is the common property of mankind, all being free to use it.

56. *Does this common right extend over all seas and bays to the shore?*—No; according to a generally acknowledged law, every country having a seaboard exercises a right of property and jurisdiction over the sea within three miles of the shore.

57. *What has regulated the division of the earth into separate countries?*—Such division has mostly arisen from the conquest of one people over another, but also from their peaceful settlement.

58. *What constitutes a nation?*—A group of people who are mostly of the same origin, speak the same language, and live under a distinct form of government.

59. *What are the principal countries in Europe?*—The United Kingdom of Great Britain and Ireland, France, Spain, Portugal, Italy, Switzerland, Belgium, Holland, Austria, Prussia, Germany, which consists of several states, Denmark, Sweden and Norway, Russia, Turkey, and Greece.

60. *Does each of these comprehend only one nationality or race?*—It is not altogether so.

61. *Give an example.*—The United Kingdom comprehends England, Wales, Scotland, and Ireland, all differing somewhat, but now happily blended as regards a common interest and government. Within Germany, Russia, and several other countries, there are similar distinctions.

62. *What is a city called which contains the seat of government?*—The capital, or metropolis.

63. *What is the capital of the United Kingdom?*—London.

64. *What is the capital of France?*—Paris.

65. *Mention some other capitals.*—Madrid, of Spain; Lisbon, Portugal; Florence, Italy; Rome, Papal Dominions; Berne, Switzerland; Brussels, Belgium; Amsterdam, Holland; Vienna, Austria; Berlin, Prussia; Frankfort, Germany; Copenhagen, Denmark; Stockholm, Sweden and Norway; St Petersburg, Russia; Constantinople, Turkey; Athens, Greece.

66. *What is the highest mountain in Europe?*—Mont Blanc, which rises to a height of 15,781 feet.

67. *What are the principal seaport towns in England?*—Liverpool, Bristol, Southampton, Hull, and Newcastle.

68. *The chief naval stations?*—Portsmouth, Plymouth, and Chatham.

69. *The chief manufacturing towns?*—Manchester, Preston, Leeds, Bradford, Sheffield, Birmingham, and Newcastle-on-Tyne.

70. *The chief university towns?*—Oxford and Cambridge.

71. *The chief cathedral towns?*—Canterbury, York, Winchester, Gloucester, Salisbury, Lincoln, Litchfield, and Carlisle.

72. *What island lies south of England?*—The Isle of Wight.

73. *Where is Wales situated?*—West of England.

74. *What is its general character?*—Wales, usually divided into North and South Wales, is mountainous and picturesque.

75. *Where is Scotland situated?*—North from England, from which it is divided chiefly by the river Tweed and Cheviot Hills.

76. *How do we distinguish the leading divisions of Scotland?*—As consisting of the Highlands and Lowlands.

77. *Where are the Highlands situated?*—In the north-west of Scotland. They form a mountainous and picturesque region.

78. *What islands lie west of Scotland?*—The Hebrides, or Western Isles.

79. *What islands lie north of Scotland?*—The islands of Orkney and Shetland.

80. *Mention some of the cities and towns in Scotland.*—

Edinburgh, the ancient capital; Glasgow, a large commercial and manufacturing city; Perth, Dundee, Aberdeen, and Inverness; also Leith and Greenock, seaports.

81. *What is the district of Scotland adjacent to the boundary of England called?*—The Scottish Border.

82. *What are lakes called in Scotland?*—Lochs.

83. *Mention two of the more beautiful of these lochs.*—Lochs Katrine and Lomond.

84. *What is the highest mountain in Great Britain?*—Ben Nevis, in the Highlands of Scotland.

85. *What is the height of Ben Nevis?*—4406 feet.

86. *Where is Ireland situated?*—West from England, from which it is separated by St George's Channel and the Irish Sea.

87. *What is the general character of Ireland?*—That of a green and fertile island, with a mild climate.

88. *What island lies between England and Ireland?*—The Isle of Man.

89. *Mention some of the cities and towns in Ireland.*—Dublin, the ancient capital; Cork, Waterford, Limerick, Belfast, and Londonderry.

90. *What foreign possessions pertain to the United Kingdom?*—The more important are Canada, New Brunswick, and Nova Scotia, in North America; the West Indies; the Cape of Good Hope, in Southern Africa; Australia, and New Zealand; also India.

91. *Which are the principal countries in Asia?*—Asiatic Russia, Tartary, Persia, Japan, Hindustan, China, and Asiatic Turkey.

92. *What is another name given to Hindustan?*—India.

93. *In what part of Asia is India situated?*—In the south, where it forms a large peninsula.

94. *How is India governed?*—The greater portion being now a foreign possession of the United Kingdom, is under British rule, with the chief seat of government at Calcutta. Two other important cities in India are Bombay and Madras.

95. *Name a large river in India.*—The Ganges.

96. *What large island lies near the southern coast of India?*—Ceylon.

97. *How is Asia usually spoken of?*—As the East, from being situated to the east of Europe.

98. *What are the Asiatics or people of Asia sometimes called?*

—Orientals, from the Latin word *oriens*, rising; by which is meant the country in which the sun seems to rise.

99. *What kind of country is China?*—It is very large and populous, and noted for the production of tea, which is exported in great quantities.

100. *What country of note is included in Asiatic Turkey?*—Syria.

101. *For what is Syria remarkable?*—It was the scene of events mentioned in Scripture history; its principal city is Jerusalem.

102. *What is the most interesting country in Africa?*—Egypt, which is remarkable for its early history and antiquities.

103. *What river flows through Egypt?*—The Nile, which every year overflows its banks, and renders the soil richly productive.

104. *Of what race are the natives of Africa?*—They are mostly negroes, and are in general in a barbarous condition.

105. *How far distant is the continent of America from Europe?*—About three thousand miles.

106. *Why is America sometimes called the New World?*—Because it was not discovered till about the end of the fifteenth century.

107. *Who were its discoverers?*—Christopher Columbus, Sebastian Cabot, and Amerigo Vespucci, from the last of whom it was named.

108. *Of what extent is America?*—It consists of two great stretches of land, called North and South America, unitedly extending several thousand miles.

109. *What unites these?*—A long narrow neck of land, called the Isthmus of Darien.

110. *What are the principal countries in North America?*—Canada and other British possessions, the United States, and Mexico.

111. *What are the principal countries in South America?*—Peru, Chili, Paraguay, Guiana, and Brazil, the Argentine Confederation, and Bolivia.

112. *In what respect do the people of North and South America chiefly differ?*—Excepting Mexico, the people of North America are mostly of English origin, while those of South America, and also of Mexico, are generally of Spanish or Portuguese extraction.

113. *What are the principal cities in North America?*—New

York, Philadelphia, Washington, Boston, St Louis, Cincinnati, Richmond, New Orleans, Toronto, Montreal, and Quebec —these last three being in Canada.

114. *What city is the seat of government of the United States?* —Washington, in the District of Columbia.

115. *What is meant by the West Indies?*—A series of islands, the larger of which are Cuba, St Domingo, and Jamaica.

116. *Where are the West Indies situated?*—In the broad bend of the Atlantic, between North and South America.

117. *What is reckoned to be the population of the whole world?* —A thousand millions of people, about 280 millions of whom belong to Europe.

Geology—Mineralogy.

1. *What is meant by Geology?*—The science which is concerned with the structure of the earth's crust.

2. *Explain what is meant by the earth's crust.*—The outward portion of the globe, which is composed of rocks, beds of clay, sand, and other substances.

3. *Do the whole of these substances lie in confused heaps?*— No; they are found to lie in a certain order or arrangement.

4. *What do we gather from a study of these circumstances?* —We learn much of the past history of the globe, besides a knowledge of materials that are useful in the arts.

Unstratified Rocks. Stratified Rocks.

5. *In what forms are rocks usually found?*—Some are found in layers or strata, one above another, and are said to be *stratified;* other rocks are in huge irregularly-shaped masses, and are said to be *unstratified.*

6. *What is thought to be the cause of these distinctions?*—

It is believed that stratified rocks were disposed in layers as a sediment from water, and therefore they are called *aqueous* or *sedimentary* rocks; while the unstratified were produced by the agency of fire, and are called *igneous.*

7. *What is sometimes a special condition of the igneous rocks?*—In certain circumstances they have been thrown up through openings and chinks, in which case they are called *volcanic.*

8. *What is the general character of unstratified rocks?*—They are hard and sparkling; one kind, well known for its beauty and durability, is called *granite.*

9. *Mention one of the volcanic kind.*—Basalt, which appears in columnar masses at the Giant's Causeway in Ireland, at Staffa in Scotland, and other places.

10. *Give the names of some of the stratified rocks.*—Clay-slate, limestone, sandstone, chalk-beds, and ironstone.

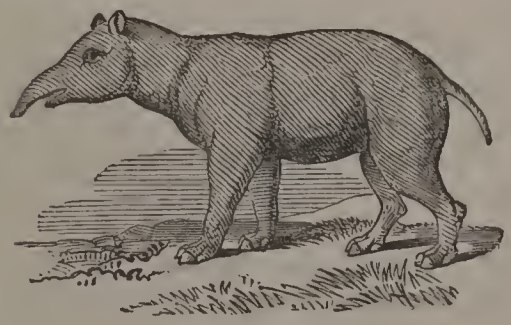
11. *What is found in some of the stratified rocks?*—The remains of plants and animals.

12. *How did these remains become incorporated in stratified rocks?*—While the rocks were forming by the settlement of loose materials in water, animals and plants became embedded in the deposit.

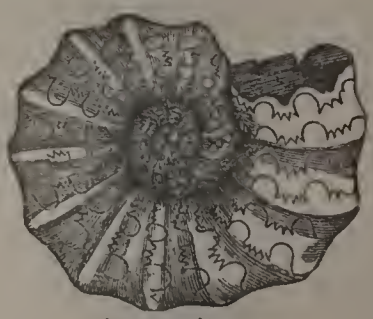
13. *Do these animal and vegetable remains retain their original form?*—Many of them do, but they have all been changed into stone, and in this condition are called *fossils. Palæontology*—a term from the Greek *palaios,* old, and *logos,* a discourse—is the branch of geology which treats of this subject.

14. *What is learned from an examination of such remains?*—A knowledge of what kinds of animals and plants existed on the earth during a long course of past ages.

15. *Mention one of the larger-sized quadrupeds found in a fossilised state?*—The Palæotherium, which varied in bulk from that of a hog to a rhinoceros.



Palæotherium.



Ammonite.

16. *Mention a well-known fossil shell.*—The Ammonite shaped like a horn, and common in the south of England.

17. *How did the rocks which contain these animal remains become buried at depths below the surface of the Earth?*—The globe has undergone many convulsions, submerging some layers of rock, and bringing others towards the surface; and seas and land have, in course of time, changed places.

18. *How have mountains come to exist?*—In some instances, by the eruption of igneous rocks; in others, masses have been left prominent by some agency which has worn down or *denuded* the rest of the surface.

19. *Are there various agencies concerned in wearing down the surface?*—Yes; the air and running water are constantly wearing down and carrying away parts of the solid rocks. Ice, in the form of glaciers and icebergs, has also *denuded* the surface.

20. *How has sea-sand been formed?*—Sea-sand, like clay and various kinds of earth, is formed of the disintegrated materials of certain rocks.

21. *What produces the rounded stones found in the beds of rivers and elsewhere?*—Pieces of rock rounded by attrition.

22. *Explain this.*—The pieces of rock have been rolled about in water till the corners have been rubbed off.

23. *What are these rounded stones called?*—When large, they are called *boulders*, when smaller, pebbles, and when of a very small size, lying in beds, they are spoken of as gravel.

24. *What is meant by Silurian rocks?*—Strata of sedimentary rocks, many of them limestone, called Silurian, because found in a part of England where a people called the Silures once lived.

25. *What is conglomerate?*—Rocks or large stones composed of small and large pebbles firmly cemented together; such pebbles being the gravel of an early sea.

26. *What is another name for conglomerate?*—Pudding-stone, from its resemblance to the mixture in a plum-pudding.

27. *What are calcareous rocks?*—Those partaking of the nature of limestone, so called from *calx*, the Latin word for lime. Chalky and limey soils are said to be calcareous.

28. *What is marble?*—Marble is the name given to various kinds of limestone rocks, which admit of a fine polish; some varieties contain small fossilised plants and animals.

29. *What is 'Parian Marble?'*—A white variety of marble found in the island of Paros, in the Ægean Sea, and used by the ancient Greeks for their statues.

30. *What are siliceous rocks?*—Those partaking of the nature of flint, the Latin word for which is *silex.* Sandy soils are said to be siliceous.

31. *What is quartz?*—A white sparkling rock, in which gold is often found.

32. *What are downs?*—Large tracts where sand has accumulated in heaps, which are sometimes covered with grass.

33. *What is a clayey soil called?*—An aluminous or argillaceous soil.

34. *What is the origin of the word aluminous?*—Aluminous is from the Latin *alumen,* signifying alum, which is one of the bases of clay.

35. *What is the origin of the word argillaceous?*—Argillaceous is from the Latin *argilla,* signifying white clay.

36. *Besides silex, lime, and clay, what other substances are found in the soil?*—In most instances, the soil contains decayed vegetable or animal matter, with some other ingredients, the whole constituting the earth of gardens and fields.

37. *What is a delta?*—A triangular-shaped tract of land found at the mouth of some rivers, and so called from its resemblance to the Greek letter delta (Δ).

38. *What is meant by Mineralogy?*—The department of science which treats of minerals.

39. *What is meant by minerals?*—Minerals is the general name for all the different substances that make up the earth's crust, such as clay, sand, limestone and other rocks, flint, black-lead, salt, coal, and the like.

40 *What are ores?*—Ores are those minerals from which metals can be extracted by smelting.

41. *What is smelting?*—Roasting ores with fire, by which the pure metal flows from the earthy part of the mineral.

42. *What are the principal metals?*—Gold, silver, iron, lead, zinc, copper, tin, nickel, and antimony; but there are many others.

43. *Are all metals produced by smelting?*—All except gold, which is found in a pure state; also copper and silver, which are found pure in some places.

44. *What is coal?*—A dark-coloured, inflammable substance, properly called fossil-coal, because it is dug from the earth.

45. *Of what is fossil-coal composed?*—Chiefly of vegetable matter, compressed into a compact mass.

46. *How can vegetable matter have become sunk so as to form*

coal?—By the submergence of land in one of the convulsions which have caused the sea to rush in and cover the land.

47. *Of what species of vegetable matter does coal usually consist?*—Of forests of trees and ferns, upon the quality of which the richness of the coal depends.

48. *In digging for coal and other fossils, whether does it become cold or warm as we descend?*—It becomes the more hot the lower we descend into the earth.

49. *What belief is entertained from this fact?*—That the centre of the globe is in a state of very great heat.

50. *How is the central heat of the globe manifested on the surface?*—By volcanoes and hot mineral springs.

51. *What are volcanoes?*—Mountains which, through openings, occasionally throw up burning matter or lava, together with stones, ashes, and, in some instances, mud.

Mount Etna, in Sicily.

52. *What is the opening of a volcano called?*—The crater.

53. *How is the burning matter ejected from the crater?*—Sometimes it is thrown to a height in the atmosphere, accompanied with dense smoke; at other times, it flows as a stream of burning lava down the sides of the mountain, destroying fields and houses in its course.

54. *When the lava cools, what is its usual appearance?*—That of a hard black rock, but porous, or full of small holes.

55. *Are there many volcanoes?*—They are some hundreds in number.

56. *Which are the more remarkable in Europe?*—Etna in Sicily, Vesuvius in Italy, and Hecla in Iceland.

57. *In what part of the earth are volcanoes most numerous?*—In South America.

58. *Do volcanoes ever occur in the sea?*—Yes; they sometimes break out in the bed of the ocean, and throw up materials which form volcanic islands.

59. *Are there any extinct volcanoes?*—There are many such; some may be seen in Auvergne in France, with their craters, resembling great basins covered with green turf.

60. *What is the origin of the term volcano?*—It is from Vulcan, a heathen deity who was supposed by the ancients to reside under Mount Etna, engaged in forging thunderbolts for Jupiter.

61. *Why are certain springs called mineral springs?*—Because they contain a quantity of some soluble mineral, such as various kinds of salts, iron, and lime.

62. *What are the springs called that contain iron?*—Chalybeate springs, from *chalybs*, the Greek word for steel; they are also called ferruginous springs, from *ferrum*, the Latin word for iron.

63. *How are mineral substances imparted to springs?*—The water dissolves them in passing through rocks and other strata that contain them, and if the rocks are hot, the consequence is that the mineral water is warm.

64. *What is petroleum?*—Natural oil, which gushes in springs from the earth, and is sometimes spoken of as naphtha.

65. *Where are these oil-springs found?*—In Burmah and other parts of Asia, France, Italy, and North America.

66. *How is the oil formed in the earth?*—It is believed to be a result of the earth's internal heat acting on beds of a rich kind of coal. The heat may be said to distil the oil from the coal—perhaps first raising a gas, which is reduced to a liquid state by the pressure of the earth.

67. *Is petroleum or naphtha an object of manufacture?*—Yes, it has latterly been made from petroleum-coal, which is dug in Scotland; the oil so produced and refined being generally known as parafine-oil, which is burned in lamps.

68. *What are geysers?*—Boiling springs in Iceland, in which the water is ejected in a column to a great height, the force being probably the steam generated low down by the heat.

69. *What are earthquakes?*—Disturbances in the crust of the earth, sometimes only slight tremblings, but at other times violent convulsions accompanied with loud noises.

70. *What is supposed to be the cause of earthquakes?*—Volcanic action, by which, according to geology, many changes have been effected on the surface of the globe.

71. *Is geology an ancient science?*—No; it is of comparatively modern origin, and new discoveries in it are constantly being made.

72. *Were ancient nations acquainted with mineralogy?*—Only in a limited way. They knew of certain ores which they worked for purposes of art.

73. *Substantiate that fact by a quotation from Scripture.*—In Deuteronomy, eighth chapter and ninth verse, it is said of the Hebrews, that they shall have 'a land whose stones are iron, and out of whose hills thou mayest dig brass.'

74. *What is brass?*—A composition of copper and zinc.

75. *What is bronze?*—A composition of copper and tin.

76. *For what is bronze much used?*—Bronze is much employed in fabricating casts of statues and objects of an ornamental kind.

77. *What is pewter?*—A mixture of brass, lead, and tin.

78. *What is tinsmith's solder?*—A mixture of lead and tin.

79. *What are such composite metals called?*—They are called alloyed metals or alloys.

80. *Is the gold of coinage alloyed?*—Yes; it consists of about eleven parts of gold and one part of copper, the copper alloy being added to give hardness.

81. *How does the infusion of copper alter the colour of gold?*—It gives it a reddish tinge; if the mixture consists of gold and silver, the colour is a delicate yellow.

82. *Is there any metal mixed with the copper coinage of the United Kingdom?*—Yes; the copper coinage is a mixture of copper and nickel—the nickel giving great hardness.

83. *Was there not at one time a belief that the baser metals could be transmuted into gold?*—That strange belief was once entertained by a set of enthusiasts, who laboured to discover the art of making gold.

84. *What were those enthusiasts called?*—Alchemists.

85. *Although alchemists failed in gold-making, were their labours useless?*—No; the alchemists made a number of discoveries concerning the properties of matter, and so laid the foundation of the science of Chemistry.

Chemistry—Heat—Atmosphere—Sound.

1. *What is meant by Chemistry?*—The science which treats of the elementary properties of substances, and their changes.

2. *What did the ancients consider to be the Elements?*—They spoke of fire, air, earth, and water as the four elements.

3. *Were they right in saying so?*—No; fire is only an extreme condition of heat, air is a mixture of several elements, and so are earth and water.

4. *How many elementary substances are now known?*—Chemistry has made known about sixty.

5. *What is their nature?*—The greater number are metals; five are gases, or fluids in the form of air; the others can only be described as non-metallic. All the objects we see around us, including the air we breathe, are compounds of some of these elements.

6. *How have they been compounded?*—Such has been the work of nature—all has been adjusted in a scheme of comprehensive Beneficence.

7. *How are these compounds discovered?*—Practical chemists analyse them in their laboratories.

8. *What is Chemical Analysis?*—The disunion or separation of the elementary ingredients of a body.

9. *How is chemical analysis effected?*—By a great variety of ingenious operations, in many of which heat performs an important part.

10. *Have discoveries of this kind proved valuable?*—Exceedingly so. Besides extending a knowledge of nature, the discoveries of chemists have made known many useful medicines; also colouring matters and other preparations which are of great service to mankind.

11. *Mention some of these useful preparations.*—Soap for washing, which is made chiefly from the union of an alkali called soda with tallow. Another is carburetted hydrogen gas, which is extracted from coal, and used for lighting houses and towns.

12. *What is chemical affinity?*—The natural attraction of different kinds of matter for each other, by which they

combine to form another body; water being an example of a combination of hydrogen with oxygen.

13. *What is chemical decomposition?*—The dissolving of bodies into their original elements.

14. *Where have we an example of this?*—In the dissolution of animal substances when buried in the earth.

15. *Is it possible to transform a liquid into a solid body?*—Yes; for example, the syrup of the sugar-cane can be transformed into sugar, a solid dry article.

16. *In what manner does the liquid syrup assume this character?*—It crystallises.

17. *What is crystallisation?*—A spontaneous arrangement of particles into regular fixed shapes.

18. *Are there other instances of crystallisation?*—There are many such; but none is so beautiful as that often seen in flakes of snow, which are of various regular forms.

Flakes of Snow, magnified.

19. *What is vitrifaction?*—The process of converting certain materials into glass by fusing them together by heat.

20. *What materials are used for the making of glass?*—Sand or flint, and some alkaline salts.

21. *Is the art of glass-making ancient?*—Yes; but it is only in modern times that it has been brought to a high degree of perfection, as is seen in the finer kinds of crystal.

22. *Of what gases is the atmosphere composed?*—Chiefly nitrogen, with oxygen, and a small quantity of carbonic acid—the nitrogen is nearly four to one of the oxygen.

23. *But is not the oxygen the vital principle of the air?*—Yes; but it needs a strong dilution of nitrogen; oxygen, however, is the great supporter of animal life, and maintains combustion.

24. *Explain combustion.*—Combustion is the combining of some substances with oxygen, attended with red heat, and usually with flames, whence it follows that the fire will go out if deprived of oxygen. In blowing a fire, it is the rush of oxygen which is the true cause of the fierce blaze.

25. *What is the cause of rust in iron?*—Oxygen entering into

combination with the surface of the metal, the combination being promoted by moisture; rusting is an ordinary term for the oxidising of iron.

26. *Is the common air deteriorated by breathing?*—It is. Pure air is chemically changed in the act of breathing, and what we exhale has lost its oxygen, and is loaded with carbonic acid gas.

27. *Is carbonic acid gas unwholesome?*—Inhaled, even in small quantity, it is very injurious to animal life; but, on the contrary, it supports vegetation.

28. *Where are the injurious effects of breathing bad air felt?*—In close rooms where several persons are sleeping or sitting; this is a common cause of fevers and other illnesses.

29. *What is caloric?*—It is a term sometimes employed to signify heat, and is from the Latin word *calor*, heat; when anything produces heat, it is said to be *calorific*.

30. *What is latent heat?*—Heat which is concealed in a body, and does not manifest its presence under ordinary circumstances.

31. *Is the development of fire by friction, and by the striking of a flint on steel, a result of latent heat?*—No; that opinion was once entertained, but is now abandoned.

32. *What, then, produces the heat?*—It is supposed to be caused by the violent arresting or retardation of motion.

33. *Explain this more fully.*—Motion—as, for example, the motion of a wheel on an axle—being greatly retarded by friction, or suddenly arrested, as in the case of a steel striking a flint, heat is the consequence, and sparks of fire are probably produced.

34. *What do we feel in the absence of heat?*—The sensation of cold.

35. *What is frost?*—A very low degree of heat, which turns water to ice, and this begins to take place when the thermometer indicates thirty-two degrees.

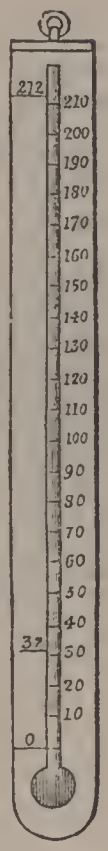
36. *What is ice?*—Water frozen into a hard and compact mass. Certain fresh-water lakes in North America produce ice in perfection for the cooling of beverages.

37. *What is a thermometer?*—An instrument for measuring heat, consisting of a glass tube with mercury, which rises or falls according to the surrounding temperature.

38. *What is the scale of the thermometer?*—It consists of equal divisions, called degrees, made alongside the tube, and numbered from 0 or *zero*, at the bottom, to 212 at the top—32

degrees is the freezing-point, 98 blood-heat, and 212 the boiling-point.

39. *Is that the only scale?*—No; on the continent of Europe other scales are employed; but this, which is called the Fahrenheit thermometer, from the name of its constructor, is the one used in Great Britain, and chiefly referred to.



Thermometer.

40. *What is meant by radiation of heat?*—The process by which heat is given off. Heat is radiated or sent off in rays from the sun, from a fire, or from any heated object.

41. *Does the absorption of heat in any way depend on colour?*—Yes. Black garments more readily absorb heat than those which are white.

42. *Where does this fact influence the mode of dressing?*—In India and other hot countries, where the natives dress themselves chiefly in light white garments.

43. *Does colour affect the radiation of heat?*—Yes; a black surface gives off heat better than a light one; for example, pipes for warming houses give off more heat when they are black than when they are light-coloured.

44. *What are bodies called which receive and convey heat readily?*—Good conductors of heat.

45. *Give an example of a good conductor of heat.*—Metals are good conductors, as is felt in the handle of a metal tea-pot, in which a piece of wood, as being a bad conductor of heat, has to be interposed.

46. *Do not woollen garments give warmth?*—It is a popular error to say they do; they only, as being bad conductors of heat, keep the animal warmth from leaving us.

47. *At what temperature is water most dense?*—At about 40 degrees. When heat is applied, the water expands, and afterwards beginning to boil, flies off as steam.

48. *What takes place when the temperature of water sinks below 40 degrees?*—The water expands until it reaches 32 degrees, when it assumes the form of ice.

49. *How is the expansion of water in freezing familiarly exemplified?*—In the bursting of water-pipes during frost.

50. *What promotes evaporation?*—The heat of the sun, and artificial heat.

51. *Give an example of evaporation.*—When a wetted piece of

cloth is hung out to dry, the moisture is exhaled or carried off by evaporation into the atmosphere.

52. *Does evaporation go on upon a great scale in nature?*—Yes; from sea and land, and from all animals, there is a constant exhalation, but more in hot than cold weather.

53. *What causes the moisture on the inside of glass-windows?*—The exhaled breath and other moisture is condensed on the glass in consequence of the cold outside.

54. *If it be very cold outside, what ensues?*—The moisture on the glass is frozen, and assumes a feathery appearance.

55. *Why do walls and paved passages inside of buildings sometimes have a damp appearance?*—Because their cold condenses the floating moisture in the atmosphere; this is seen in mild but moist weather.

56. *What is dew?*—The condensation of atmospheric moisture on blades of grass or other objects, during night.

57. *What is hoar frost?*—Dew frozen by cold.

58. *What becomes of all the moisture exhaled into the atmosphere?*—It forms fogs, mist, and clouds, which are only vapour condensed by cold, and so rendered visible.

59. *Why do fogs, mist, and clouds disappear in fine weather?*—They are dispelled by heat, their moisture resuming an invisible condition.

60. *Why does mist sometimes disappear suddenly while rolling along hills?*—The mist, in its passage, comes into a warmer atmosphere, and so vanishes.

61. *What is a common cause of fogs at sea?*—Sudden chilliness of the atmosphere, by which the exhaled vapour assumes the form of mist. When the sea happens to be of a mild temperature, the fogs become intense.

62. *When mists and clouds are not dispelled by heat, what usually ensues?*—They drop down as rain or snow.

63. *But why do heavy rains occur in warm as well as in cold weather?*—The reason is, that the atmosphere becomes oversaturated with moisture, and must necessarily yield it as rain.

64. *What is the use of rain?*—Rain is of the greatest value in irrigating and refreshing the earth, in supporting vegetation, and in supplying water for the use of man and the lower animals.

65. *What is snow?*—Particles of water frozen in the atmosphere; when rain-drops are frozen in falling, they form hail.

66. *Is frost of any particular use?*—It is of value in destroying hosts of insects and other vermin which would be injurious to vegetation; also in mouldering down the hard clods of earth in newly-turned-up fields and gardens.

67. *Is snow of any use?*—When it lies one or two feet deep for any length of time, it shelters tender vegetation from the severity of frost, and is so far of service to agriculture.

68. *Does sea-water freeze?*—Yes; but very slowly and imperfectly, and is seen chiefly in the polar regions.

69. *Is the ice of sea-water salt?*—It is less so than sea-water; in freezing, a portion of the saline particles is rejected.

70. *Is there any heat in ice?*—To the touch ice always conveys the sensation of extreme cold, but by the thermometer ice can be shewn to vary in having more or less heat like other bodies.

71. *Can ice be made to serve the purposes of glass?*—Yes; when sawn into thin slabs, it may serve as glass for windows; but this can take place only in excessively cold countries, where the rays of the sun are too feeble to overcome the frost.

72. *What are glaciers?*—Huge masses of ice and snow which slide down from lofty situations to valleys; the word glacier is from *glace*, the French word for ice.

73. *What is meant by glacial action?*—It is a term used by geologists to signify the effect produced on the surface of rocks and mountain-sides by the grazing of glaciers during their descent; the collection of gravel and other matter brought down by glaciers is called a *moraine*.

Icebergs.

74. *What are icebergs?*—Floating islands of ice, which are seen chiefly in the ocean in extreme northern and southern latitudes, and are very dangerous to navigators.

75. *Whence do icebergs come?*—From the polar regions, where they break off from the ends of glaciers that protrude into the ocean, and float about till they are gradually melted.

76. *Are there any means for discovering the approach of icebergs?*—One method consists in watching the fall of temperature in the atmosphere; for the icebergs absorb heat for a considerable distance.

77. *How high are the clouds?*—They float in the atmosphere from a few hundred feet to six miles above the surface of the Earth.

78. *Where are the greatest number of clouds?*—In hilly countries and over high mountain-ranges.

79. *Why should hills cause clouds?*—The cold tops of hills and mountains condense the floating moisture in the atmosphere into clouds; and as clouds produce rain, hilly countries are always the most rainy.

80. *Has there been any classification of clouds?*—Yes; for the sake of distinction they have been divided into several classes.

81. *Mention the names of the principal classes of clouds.*—The *Cirrus*, or thin feathery cloud on the blue sky; the *Cumulus*, or great heap of cloud, resembling a mass of white wool; and the *Stratus*, or general haze. These leading varieties are sometimes combined, producing the *Nimbus*, or dark, heavy rain-cloud.

82. *When is the nimbus seen in its most perfect form?*—During thunder-storms, when the atmosphere is densely overcast.

83. *What height does the atmosphere reach?*—It wraps round the whole Earth to the height of about forty-five miles.

84. *Is the atmosphere of uniform consistency?*—No; it is most dense at the lowest level, and grows gradually thinner as it ascends. At the height of seven miles it is too thin to be breathed.

85. *Why are the tops of high mountains perpetually covered with snow?*—Because the air is so thin at these heights that it cannot retain the heat; the consequence being snow and glaciers.

86. *Where does the air best retain the sun's heat?*—Where it is dense, and to a certain degree moist, and it is there that vegetables grow most luxuriantly.

87. *What is the pressure of the atmosphere?*—It presses with a weight equal to about fifteen pounds on every square inch.

88. *Is this pressure sustained by animals?*—All animals, including human beings, sustain this degree of pressure.

89. *Why do we not feel the pressure of the atmosphere?*—

Because it presses equally on all sides, and up as well as down; the air in the cavities and small vessels of the body therefore acts as a spring pressing outward; a balance of internal and external pressure is accordingly kept up, and we are unconscious of any weight being laid on us.

90. *Give familiar examples of the pressure of the atmosphere.*—When we cause a thimble to adhere to the hand by sucking the air from beneath it, the adhesion is the result of the pressure of the atmosphere on the exhausted space on the hand. The water in a glass fountain used for a bird-cage is kept from running out by the pressure of the atmosphere.

91. *What machine in ordinary use acts from the pressure of the atmosphere?*—The water-pump, which removes the air from the inside of the tube; the pressure on the surface without then forces up the water within.

92. *What is the air-pump?*—It is a machine employed to pump or draw air from a glass vessel, producing a vacuum or empty space; the glass vessel used for this purpose is called the *receiver*, because it receives objects to be operated on.

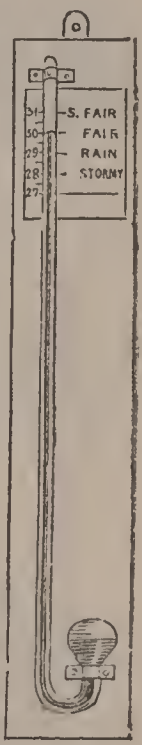
93. *Can air be compressed?*—Yes; but to compress it great force is required, and it has a tendency to rend any vessel in which it is forcibly confined.

94. *What is the science which treats of the properties of the air?*—Pneumatics, from a Greek word signifying to breathe or blow.

95. *Is water in boiling affected in any way by atmospheric pressure?*—Yes. Near the level of the sea, water boils at the heat indicated by 212 degrees of Fahrenheit's thermometer; but at the top of a high hill the water will boil at a lower heat, because there the pressure of the atmosphere is less.

96. *At what heat does water boil at the top of Mont Blanc, which is nearly three miles high?*—At 189 degrees of Fahrenheit's thermometer.

97. *What is the barometer?*—It is an instrument such as is here figured, and is employed for measuring the pressure of the atmosphere.



Barometer.

98. *What is its construction?*—There are several kinds of barometers. That in common use is a glass tube shut at the upper end, and having a bulb at the lower end, as in the figure, or the lower end open and dipped in a basin of mercury, the mercury rising thirty inches more or less in the tube, according to the weight of the atmosphere. The

height of the mercury is indicated by a scale along the side of the instrument.

99. *Why is this instrument called a weather-glass?*—Because the degree of pressure indicated is a token of the approaching state of the weather, such as fair, fine, rain, stormy.

100. *How is air altered by heat?*—It is expanded or rarefied, and so being rendered lighter, it ascends or floats upwards, while colder air descends to take its place.

101. *How is this exemplified?*—By the rushing of the cold air, called draughts, into apartments where the air is much heated and rarefied.

102. *How is this shewn on a great scale in nature?*—By the blowing of winds, which are currents of air set in motion by fluctuations of temperature.

103. *What are the trade-winds?*—That is a name given by mariners to winds which blow steadily for months in particular parts of the tropical regions.

104. *What are tornadoes?*—They are fierce gales of wind which often cause great damage in the West Indies and other tropical regions.

105. *What are cyclones?*—A cyclone is a fierce gale, which blows in a wide circle, as a species of whirlwind, and causes much damage in its course; the central part within the circle being generally calm.

A Water-spout.

106. *What are water-spouts?*—They are tall columns of water and vapour, which are caused chiefly by whirlwinds.

107. *Where are water-spouts most frequently seen?*—At sea, from whence the lower part of the column is sucked up, and is joined to a part reaching from the clouds; such water-spouts are dangerous to mariners. When water-spouts break on the land, they cause great damage.

108. *If heated or rarefied air be confined in a light and thin bag, what ensues?*—When the bag is liberated from the hand it will ascend.

109. *Give an example?*—The soap-bubbles blown by a child—the globular light bubbles being bags full of warm or rarefied air.

110. *What is a balloon?*—A large bag of light silk, which ascends to great heights when filled with rarefied air, or a species of gas lighter than the atmosphere.

111. *Besides supporting animal and vegetable life, has the air any other use?*—It conveys sound.

112. *What is sound?*—Vibrations of the air conveyed to a membrane in the ear, from which an impression is communicated to the brain.

113. *At what rate of speed does sound reach the ear?*—Sound travels through the air at the rate of 1125 feet per second; the report of a gun fired at a mile's distance reaches us in from 4 to 5 seconds.

114. *Is sound conducted best along the land or water?*—It travels best along the surface of water, such as lakes and seas; it can also be well conducted along a tube.

115. *What is an echo?*—A sound reflected or sent back from the object on which it strikes.

116. *Where do echoes most commonly occur?*—In the neighbourhood of rocks, walls, and buildings.

117. *What is meant by acoustics?*—The term acoustics signifies the branch of science which treats of hearing and sound; it is from a Greek word signifying to hear.

118. *To whom is a knowledge of this science of special importance?*—To architects who plan churches and public halls; it being important that all such buildings should be constructed so as to enable speakers to be properly heard by an audience.

Light—Electricity—Magnetism.

1. *Mention the source of daylight?*—The sun.

2. *Does this light come instantaneously from the sun to the earth?*—No; it is found that light travels at the rate of a hundred and ninety-two thousand miles in a second; accordingly, the light of the sun takes eight minutes to reach the earth.

3. *Do rays of light proceed in a straight line?*—Only when they pass through empty space, or through a transparent body of uniform density.

4. *What ensues when the transparent body is of a varying density?*—Then, the rays are bent or turned aside, and are said to be *refracted.*

5. *When are rays of light said to be reflected?*—When they are sent back into the medium through which they came to meet the reflecting surface.

6. *Give an example of reflection.*—The light of the sun which is thrown on the moon, is reflected from its surface to the earth.

7. *Give other examples.*—In the evening after sunset, and in the morning, before sunrise, the rays of the sun strike on the particles of air and moisture in the upper part of the atmosphere, and are reflected towards us: this imperfect light is called the twilight.

8. *Why in some fine climates does it become suddenly cold when the sun sets?*—Because the air is too pure and dry to retain the heat which came from the sun.

9. *Does the light consist of purely white rays?*—They appear so to the eye when they are not broken up or refracted.

10. *Explain this more fully.*—If the rays of light are made to pass through a triangular piece of glass, called a prism, or other transparent substance, they are separated into seven colours shading into each other.

11. *Name the prismatic colours.*—Red, orange, yellow, green, blue, indigo, and violet.

12. *Are all these colours primary or elementary?*—No; there are only three primitive colours, red, yellow, and blue; from these the others are compounded—green being a union of blue and yellow, and so on.

13. *Where are the prismatic colours shewn beautifully in nature?*—In the rainbow.

14. *How are the colours of the rainbow produced?*—By the sun's rays being reflected and decomposed in their passage through the falling drops of rain; to see the rainbow, we must stand between the sun and the falling shower.

15. *Is the rainbow produced by moonlight?*—Yes; but faintly—it is called a lunar rainbow.

16. *Can the rainbow be seen on a small scale?*—It can be seen in the spray of a water-fall; and its colours are seen in the crystal drops of a chandelier, when lighted up.

17. *What is polarisation of light?*—A change produced on light by a series of reflections, or transmission through crystals, by which it is said to be polarised, or to have opposite poles; this remarkable property in light has engaged the deep study of men of science.

18. *What use has sunlight besides that of giving us light?*—The light of the sun powerfully affects vegetation. It gives the green colour to grass and other vegetables; without it, plants become white and sickly, as is seen in vegetables growing in a dark cellar.

19. *How does sunlight affect animal life?*—It communicates health, and a sensation of pleasure to most animals, particularly to human beings, who do not thrive in dingy situations.

20. *What is artificial light?*—The light given by candles, gas, and other inflammable articles.

21. *What is meant by optics?*—The term optics signifies the branch of science which treats of light and vision; it is from a Greek word signifying to see.

22. *What is the principle of vision?*—Objects presented to the eye have their images depicted on the back part of the eye, called the *retina*, from which certain nerves convey intelligence of the image to the brain.

23. *But how is the image or picture of objects condensed into so small a space?*—The front part of the eye forms a lens which collects the rays of light proceeding from the object, and throws them condensed on the retina.

24. *Describe a lens.*—There are various kinds of artificial lenses, but the best known are those used for spectacles, which consist of pieces of transparent glass, ground so as to bulge in the centre; they act on the principle of collecting the rays from objects and transmitting them to the eye, in aid of the natural lens.

25. *What is meant by 'the focus of a lens?'*—It signifies the point at which the converging rays meet. The greatest

heat is there felt, hence the name. By means of a lens, the rays of the sun may be made to set fire to an inflammable substance at the proper focal distance.

26. *What is a telescope?*—It is an optical instrument, consisting of a tube fitted up with a number of lenses, by which distant objects are seen distinctly; the word *telescope* is from the Greek *tele*, at a distance, and *scopeo*, I see.

27. *What is a microscope?*—It is an optical instrument, fitted up with lenses and mirrors for the purpose of magnifying very minute objects; the word *microscope* is from the Greek *micros*, small, and *scopeo*, I see.

28. *To what uses has the microscope been put by men of science?*—By its means, a knowledge has been gained of the structure of exceedingly small animals, also the structure of plants, and other minute objects.

29. *What is phosphorescent light?*—It is that which is natural to minute animals in the sea, some kinds of fish, certain decaying animal matter, and also the glow-worm and fire-flies.

30. *What is electricity?*—A remarkable property in nature, which, like heat, pervades all material things.

31. *From what is the word electricity derived?*—From *electron*, the Greek word for *amber*, which, when rubbed, was observed to have the power of attracting light bodies, as hair and feathers.

32. *Does any other body than amber shew this power?*—Yes; several others, particularly glass, which, when smartly and continuously rubbed, emits bright electric sparks.

33. *How is this best done?*—By an electrifying machine, in which a glass cylinder is kept rubbing against a cushion, and the electricity so produced can be collected into a phial coated with tin-foil. A collection of such phials is called an electric battery.

34. *What is a good conductor of electricity?*—A metal wire or rod; all metals being good electric conductors.

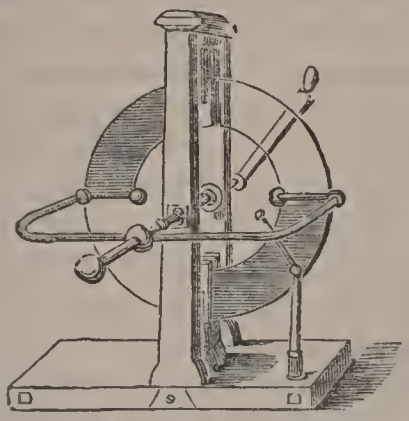
35. *What are bad electric conductors?*—Glass, wax, silk, wool, and feathers, also dry air.

36. *Is electricity always the same?*—No; there are two opposite kinds, called positive and negative.

37. *What ensues when a body that is positively charged is brought in contact with one negatively charged?*—The positive rushes into the negative to restore the equilibrium. Usually a flash of electric light is seen on such occasions.

38. *Where is this seen on a grand scale?*—In nature, when the

positive electricity in an overcharged cloud passes with a tremendous explosion, into clouds negatively charged, or into the ground.



Electrifying Machine.

39. *What is lightning?*—Flashes of electricity from overcharged clouds.

40. *What is thunder?*—Explosions of electricity in the atmosphere.

41. *Is thunder dangerous?*—No, but lightning is; after the flash is over the danger is past.

42. *What is done to avert injury to buildings from lightning?*—The buildings are provided with metal rods which conduct the lightning to the ground.

43. *How is electricity otherwise demonstrated in nature?*—In several ways, such as those light streaks in the sky at night, called the *Aurora Borealis*, or electricity passing through rarified parts of the atmosphere.

44. *What is magnetism?*—It is a natural property resembling electricity, if not another form of the same thing.

45. *Where is the magnetic property largely observable?*—In one of the ores of iron called the loadstone, from which, by rubbing, it can be communicated to any piece of steel. Such magnetised pieces of steel are called artificial magnets.

46. *What is remarkable about these magnets?*—They attract small pieces of iron to them, and hold them by mere contact.

47. *What else is remarkable?*—Between the two opposite points of such slips of metal the magnetic influence is continually though invisibly flowing.

48. *What are the poles of the magnet?*—Its extremities, where the magnetic influence is greatest.

49. *Have these poles any reference to the poles of the Earth?*—Yes. The earth itself seems to be a great magnet, and its

magnetic poles nearly correspond with the north and south pole. It is found that the poles of an artificial magnet, when nicely poised, are directed towards the magnetic poles of the earth ; hence the action of the mariner's compass.

50. *What is Galvanism?*—The electricity developed by the action of certain chemical agents on plates of different metals, usually zinc and copper, and which, like the electricity of friction, can be collected in batteries.

51. *What is this species of battery called?*—A galvanic battery, from its discoverer, Galvani, an Italian philosopher.

52. *To what use has this kind of electricity been put?*—It is employed in the electric-clock and electric-telegraph.

53. *What is the principle of the electric-telegraph?*—Electricity being sent along a wire, causes the deflection of a needle at its opposite end, that points to letters on a dial according to the will of the operator.

54. *What is meteorology?*—The branch of science which treats of winds, clouds, rain, thunder, lightning, and all things remarkable in the atmosphere.

Matter and Motion—Water—Mechanics.

1. *What is scientifically meant by matter?*—All that we can recognise by the senses—the earth, air, water, animals and vegetables, the sun and other heavenly bodies.

2. *Explain the difference between organic and inorganic bodies.*—Organic bodies are those having a structure composed of parts each adapted to perform some separate function ; inorganic bodies are destitute of this natural provision. Animals and plants—in other words, all things that have life—are organic bodies ; all other things are inorganic.

3. *When one body is heavier than another of the same bulk, what is said of it?*—That it is more dense, or consists of more particles of matter.

4. *Give some examples of this difference of density.*—A stone is more dense than water ; water is denser than cork ; and cork is denser than air.

5. *Is matter destructible?*—No ; when, for example, a thing is burned, it is destroyed only as regards its form ; the matter of which it was composed has assumed new shapes.

6. *Give examples of substances assuming new shapes.*—If the substance burned be coal, it is dispersed in the form of smoke or particles of soot, gas, and ashes or dust. In the same manner, animal and vegetable substances decaying in the ground, turn to dust or exhale into gases.

7. *Mention the name of the force which draws or attracts masses of matter towards each other.*—Attraction of gravitation, as exemplified in the falling of bodies to the earth.

8. *When a thing falls from our hand, is its fall only the result of attraction?*—Yes; the earth attracts it, and we say it falls.

9. *What is the principle on which this species of attraction takes place?*—Two bodies of the same size attract or draw each other equally; but if one be double the other, it will exert a double force; and so on in proportion.

10. *Is the attraction exerted from the centre or the surface of bodies?*—It is exerted from the central point, round which the particles are equally assembled. If more particles are on one side of a body than another, the centre of attraction will be correspondingly different.

11. *Give an instance.*—When a body falls to the ground, it descends in the direction of the centre of the earth.

12. *Is what we call straight up and down in this direction?*—Yes; the straight, upright front of a building, for example, is in this direction. This is determined by applying the plumb-line, which hangs straight down in the direction of the centre of the earth.

13. *How does distance affect attraction?*—Attraction varies according as bodies are near or distant from each other—always the further away, the less attraction. It diminishes inversely as the squares of the distances.

14. *Explain this more clearly.*—Whatever be the attraction at the distance of one foot, it is, at the distance of two feet, reduced to a fourth of what it was; if the distance is made three feet, the attraction becomes a ninth; if four feet, a sixteenth. The same law holds good of light, heat, and all influences which emanate from a certain point.

15. *What is weight?*—Weight is only a result of attraction. An article weighing a thousand pounds at the level of the sea, will, at the height of four miles, weigh by a spring-balance two pounds less.

16. *Why a spring-balance?*—Because, if an ordinary balance

with scales were used, the weight put into one scale would be as much affected as the article put into the other.

17. *Are there any small bodies in space beyond the earth's attraction?*—Innumerable small bodies are believed to be floating in space, or circling round the sun, beyond the ordinary attraction of the earth.

18. *Do any of these bodies ever fall to the earth?*—It is supposed they occasionally do, when the earth, in the course of its annual revolution, happens to come so near them as to draw them towards it; such bodies are called aërolites or meteorolites.

19. *What is the appearance of meteorolites in falling?*—They have a luminous appearance, on which account they are sometimes spoken of as fire-balls or shooting-stars.

20. *Why are meteorolites luminous?*—They get heated and luminous from the rapidity with which they shoot through the atmosphere towards the earth; when cool, they seem to be of a metallic character. A number of different sizes are to be seen in museums.

21. *Is the attraction towards the earth the same in all parts of the globe at the sea-level?*—No; the attraction is weakest at the equator, and stronger as we advance to the poles.

22. *Why is there this difference?*—Because the globe is not a perfect sphere; its diameter at the equator is twenty-six miles greater than at the poles; on which account it follows that the surface there is thirteen miles further away from the centre than the surface at the poles; consequently, the drawing force at the poles is strongest.

23. *Can this difference of attraction be exemplified in any way?*—Yes; by means of the pendulum.

24. *What is a pendulum?*—It is a piece of metal swung by a rod, which regulates the movement of clocks.

25. *How is the pendulum affected by attraction?*—Its swinging to and fro being of the nature of falling, it swings more actively, or is attracted quicker backwards and forwards at the poles than at the equator.

26. *How are pendulums regulated so as to keep good time everywhere?*—They are gradually lengthened in advancing towards the poles; for the longer they are, they vibrate the slower. In this way the increasing attraction is counteracted.

27. *How does the attraction of gravitation operate as regards liquids?*—Attraction operates in liquids as on solids, but the particles of a liquid being free to move in any direction, they all endeavour to get to the lowest level within their reach.

28. *What is usually said of this tendency in water?*—That by gravitation water will always find its level.

29. *How is this seen in nature?*—By the flowing of rivers and rivulets. As is well known, the force of running water is employed as a moving power to turn mills.

30. *How is water supplied to towns?*—By being conducted through close pipes, down which it flows by its own gravity.

31. *How high will it rise in any town to which it is conducted?*—Water will rise to the level of the fountain from which it flows, and no higher.

32. *Does the pressure of water depend on its depth?*—Yes; it increases with the depth; this is shewn by the bursting of pipes in low situations, and also of deep reservoirs in which it is confined.

33. *What is meant by specific gravity?*—The specific gravity of a body is its weight compared with that of water.

34. *Give an example.*—The specific gravity of wood is less than that of water; and the result is, that water buoys up wood. Stone being heavier than water, naturally sinks.

35. *But are not stones easily moved in water?*—Yes; because the water partially supports them on all sides. Heavy stones and masses of gravel are thus swept away by floods.

36. *Does the buoyant power of water depend on its depth or expanse?*—No; if there be enough water to surround an object lighter than itself, that object will float. A ship floats as high in a small dock as in the ocean.

37. *What is meant by hydraulics?*—Such is the branch of science which refers to the motion of water as in pipes and sewers, and its action on machinery; by *hydrostatics* is meant the science which treats of the properties of water when it is at rest.

38. *What is the cause of friction?*—A tendency in one body to adhere to another, called adhesion. The application of grease or oil, as is observable in the greasing of axles of wheels and the oiling of machinery, is a method usually adopted to overcome friction in moving bodies.

39. *How does adhesion act as between solids and liquids?*—It acts more powerfully than between solids and solids. If we dip our hand into water, the water adheres to it, and requires to be rubbed off; what we call *wetting* is only the adhesion of the liquid to the solid body.

40. *But liquids do not always wet solids or adhere to them.*—This ensues when the particles of one substance have a greater

attraction towards each other than towards those of another substance. As examples—a rod coated with grease remains dry when plunged in water ; and the natural oil on the feathers of water-fowl keeps them from being wetted.

41. *What is capillary attraction ?*—It is a particular effect of adhesion, which, acting in small hair-like tubes, is called capillary attraction, from *capillus*, the Latin word for *a hair*.

42. *Describe its action.*—If the end of one of these small glass tubes is dipped in water, the water is seen to rise in the tube above the rest of the surface. There will be no such rising, however, unless the water wets the tube.

43. *Give some familiar examples of capillary attraction.*—Oil creeps up the wick of a lamp to supply the flame ; water will creep up a lump of sugar till it is all moistened ; water will creep up the foundations of a house and render the walls damp ; and water in a cup rises a little way all round as if anxious to cling to the vessel.

44. *If a small object such as a stalk of tea is floated on the surface, what ensues ?*—If near the edge, it will rush to the side of the vessel and cling to it.

45. *What is the inertia of bodies ?*—The tendency to remain in the condition in which they are placed, whether at rest or in motion ; for example, a carriage is at first difficult to be set in motion, but when moving it is as difficult to stop it.

46. *What is the tendency of a body in a state of motion ?*—To go straight forward, until it is obstructed or drawn out of its course. When a ball is shot from a cannon it would go straight on for ever unless it were drawn down or attracted by the earth, or stopped by the air through which it has to pass, and the same would take place with other projectiles.

47. *How is this inertia shewn in the case of persons in a carriage ?*—All the persons in a moving carriage participate in the motion. This is fatally exemplified when they attempt to leap from the carriage, for, continuing in a state of forward motion, they are dashed on the ground.

48. *Are the lower animals acquainted with this inertia ?*—Hares instinctively know that by doubling quickly in being hunted, they will perhaps outrun the dogs which follow them, for the dogs, not expecting such sudden turns, shoot a good way onward before they get round on the new track.

49. *What is meant by saying that the action and reaction of bodies are equal and opposite ?*—That a body reacts or strikes with the force with which it is struck. If I strike a table with my hand, my hand is equally struck by the table. When

a blacksmith strikes his hammer on the anvil, the anvil gives a blow with equal force to the hammer.

50. *Give further examples ?*—When a man standing in a boat tries to push another boat away from him, he pushes his own boat off at the same time. When a person fires a gun, the moving force of the gun is equal to the moving force of the ball, but the gun being much heavier than the ball, its backward tendency or recoil is proportionally less than the forward motion of the ball, and is therefore easily checked.

51. *What is momentum ?*—The motion or force in a moving body. But momentum does not depend on velocity alone ; it is made up of velocity and quantity of matter ; the momentum of a ball of iron being very much greater than a ball of wood of the same size.

52. *When a body falls from a great height, is its fall equal throughout ?*—No ; its descent becomes quicker as it falls, because it is at every instant receiving a fresh impulse from gravitation ; while, at the same time, it never loses any of the motion it got from the former impulses.

53. *How is this exemplified ?*—In the severe shock which is experienced by a person falling from the roof of a house, in comparison to that which he suffers in falling from a chair to the floor.

54. *Explain why vehicles when loaded high are so easily upset.* —In proportion as we raise a load on a carriage, we raise its centre of gravity, or that point in the mass on which the earth's attraction may be held to be exerted, and if this point happen to lean over, the vehicle has a tendency to be upset.

55. *What do we practically learn from this ?*—To keep the centre of gravity in moving vehicles as low as is practicable, so as to preserve a proper balance or equilibrium.

56. *How do rope-dancers usually preserve their equilibrium ?* —By holding a long pole loaded with lead at both ends, with which they can adjust their balance on the rope.

57. *What are the mechanical powers ?*—Certain elementary machines or instruments, out of which all machinery is constructed.

58. *Name the elementary mechanical powers.*—The lever, the pulley, the inclined plane, the wheel and axle, the wedge, and the screw.

59. *Can these be reduced in number ?*—In principle, they can be reduced to two—the lever and the inclined plane.

60. *What is the lever ?*—An instrument named from the

French word *lever*, to raise, and which is designed for raising weights with comparative ease.

61. *What is its form?*—It may be described as a bar of iron or wood, the point of which being inserted below a heavy weight, we are enabled to raise it by exerting a moderate force at the opposite end.

62. *Does the lever create power?*—No; it only modifies it. By no contrivance can we get more power from any instrument or machine than what we put into it.

Man and Lever.

63. *Explain how the power is modified.*—A pressure equal to one pound will lift ten pounds; but to lift the ten pounds through one foot, the one pound must descend ten feet. Thus, length of time in pressing with a small force is made to balance or overcome a larger force; in other words, power is gained by a sacrifice of speed.

64. *We may, then, understand that a lever consists of two parts?*—Yes; it consists of two arms usually of unequal length—the hand being applied to the one, and the weight resting on the other.

65. *What is the fulcrum of a lever?*—It is the point or prop between the two ends of the ordinary kind of lever.

66. *Give examples of the lever.*—The lever is exemplified in various ways. The instrument by which a nut is cracked is one example. We have another instance in the rowing of a boat: the hand of the rower is the power, the water against which the blade pushes is the fulcrum, and the resistance to be moved is the boat.

67. *What is the steelyard?*—An instrument for weighing of the nature of the lever.

68. *Explain its action.*—It is a lever suspended by a pivot

which is the fulcrum; from the short arm depends a scale for the article to be weighed; and on the long arm a weight is hung as a balance. In proportion as the article to be weighed is heavy, so is the weight slipped along to a greater distance from it.

69. *What is the inclined plane?*—Any rise in a road is an inclined plane. The most obvious example is that of a cart and horse going uphill. If the rise be one foot in ten feet, the horse, in addition to the draught on a level road, has to draw with a force equal to a tenth of the weight of the load.

70. *Give examples of instruments conceived on the plan of the inclined plane.*—The most familiar examples are the wedge and screw, both of great importance in the arts. As in the case of the lever, a small force exerted through a long space, has the effect of a greater force acting over a smaller space.

71. *Why do people feel tired in going up a long stair or steep hill?*—Because they are at every step lifting their own weight.

72. *What is the wheel and axle?*—It is only a variety of the lever, as exemplified in windlasses for drawing up heavy weights, and in capstans for raising the anchors of ships.

73. *What is the pulley?*—It is a wheel of wood or metal, fixed in a block, and capable of turning on an axis, with a groove cut around the circumference, to receive a rope.

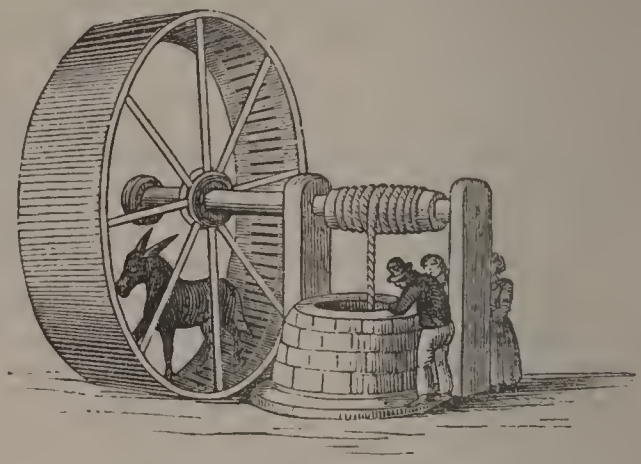
Simple Pulley.

74. *How may power be gained by the pulley?*—By making a combination of them. Pulleys may be combined in a variety of ways; but the most generally used form is that known by the name of the 'Block and Tackle' arrangement.

75. *What examples of these mechanical powers have we in machinery?*—The cogs or teeth of wheels acting on each other, are examples of the lever. The working of pump-handles, cranks, axles, and a variety of other kinds of mechanism, are adaptations of these powers. A donkey walking up the inside of a large wheel in order to draw water from a well, is a well-known example of the wheel and axle.

76. *What is the special use of machinery?*—To simplify labour. One of the simplest machines is a spade, without which or some other implement, we should have to dig with the hands.

77. *What is meant by the phrase 'mechanical combination of substances?'*—It signifies that the substances are simply mixed



Donkey and Well.

together—as for example, milk mixed with tea, spirits mixed with water—without any change in the properties of the substances. The phrase is used as a distinction from 'chemical combination,' in which the mixed substances undergo a thorough change of character.

78. *What is meant by 'Physics?'*—It signifies the science which treats of objects in nature and the principles on which they act; the term is from a Greek word signifying *nature*.

79. *What is 'Natural Philosophy?'*—That is a term often employed instead of *Physics*, and is that great department of science which includes the laws of matter and motion, meteorology, pneumatics, optics, acoustics, hydrostatics, and some other subjects.

The Vegetable Creation.

1. *What is the Vegetable Creation?*—It consists of all kinds of vegetables or plants, from the smallest to the greatest—from the lichen that incrusts the rock to the loftiest trees.

2. *What other name is given to the vegetable creation?*—The Vegetable Kingdom, by which it is distinguished from the Animal and Mineral Kingdoms.

3. *How are plants produced?*—They chiefly grow from the seeds of previous plants of the same kind.

4. *Are there many different kinds of plants?*—Upwards of a hundred and twenty thousand different kinds are ascertained to exist, and no doubt many are yet unknown.

5. *When you say exist, do you mean that plants live?*—Yes; their existence is a kind of life—life without consciousness. Generally, they are fixed to the spot on which they grow.

6. *What nourishes them?*—They require air, water, and a certain amount of heat.

7. *Do all plants require sunlight?*—The greater number do; but there are some which grow in very dark situations.

8. *What is the effect of sunlight on plants?*—It imparts the green colour which is so pleasing to the eye.

9. *How do plants imbibe nourishment?*—In the greater number of plants, the nourishment ascends from the roots through the stalk and branches by means of very minute tubes or sap-vessels.

10. *Of what service is the air to plants?*—The leaves of plants have the property of absorbing a certain amount of carbonic acid gas, which they find in the air that has been used or vitiated by animals; so that what would become greatly injurious to animal life, is serviceable to vegetable life.

11. *Do plants exhale any species of air or gas in return?*—In daylight they give off oxygen and moisture, which are serviceable to the animal creation; and thus the salubrity of the atmosphere is maintained.

12. *From what are seeds produced?*—Generally from certain parts of the plant called the pistil and stamens within the flower; the germinating power being promoted by a species of dust called the pollen, which is shed by the stamens.

13. *In what manner do seeds grow in the soil?*—Seeds begin by swelling; then, from a part of the seed called the eye, a double shoot is sent forth, of which one part goes down to form the root, while the other rises to be the stem.

14. *On being gathered, do seeds long retain their vitality?*—Some seeds are known to have retained their vitality for thousands of years; they will also lie buried for ages in the ground until circumstances allow them to germinate; but if exposed to the air, most seeds lose their vitality after a few years.

15. *What plants do not produce the ordinary kind of seeds?*—The Cryptogamia, which form the lowest class, in point of

organisation, in the vegetable kingdom ; the name is derived from two Greek words signifying secret marriage.

16. *Mention some of the plants included in the cryptogamia.*—Ferns, mosses, lichens, algæ or sea-weeds, and fungi.

17. *How are cryptogamous plants reproduced ?*—In various ways ; sometimes, as in the case of ferns, from spores which grow in clusters like specks on the under side of the leaf; sometimes, as in the case of fungi, from spores within a part of the plant, which, broken off and scattered in suitable situations, will reproduce.

Fern, with Spores.

18. *What is the difference between a seed and a spore ?*—A seed sends out a shoot from a particular point ; a spore grows from any part.

19. *How are seeds and spores diffused by nature ?*—They are carried by birds, wafted by winds, and dispersed in various other ways ; many kinds of spores are invisible to the naked eye, and no one can tell where they alight.

20. *Has not nature provided some seeds with means for flying ?*—Yes ; the seeds of the dandelion, thistle, and many other plants, are furnished with a soft down to float them through the air.

21. *What plants fling their seeds from them when ripe ?*—The broom, the poppy, and others ; as the poppy-head waves on its stalk in the wind, it throws out its small seeds to some distance through a circular row of holes.

22. *Are the fungi edible ?*—Only a few kinds ; those known as mushrooms, morels, and truffles are edible. The greater number, including what are called toad-stools, are poisonous.

23. *Where do fungous plants usually grow ?*—In dark and damp situations, and where there are any decaying substances to afford them nourishment.

24. *Mention familiar examples of cryptogamous vegetation in dwelling-houses.*—Mould and mildew, which are seen chiefly where there is damp. The dry-rot in timber is another example.

25. *Have plants been classified ?*—Yes ; according to certain peculiarities, they have been arranged into classes, genera, and species by Linnæus, a Swedish naturalist.

26. *What is his system of classification called?*—The Linnæan system, which may be studied from books of botany.

27. *Has any other person attempted a classification?*—Yes; Jussieu, a French naturalist, classifies plants into families chiefly according to the structure of the flowers and fruit. His system has since been much improved by others, and is now generally adopted as in harmony with nature.

28. *Which are the vegetables most directly serviceable to man?*—Grains, esculent roots and plants, fibrous plants, medicinal plants, and fruit and timber trees.

29. *What other name is given to the grains?*—Cereal plants, so called from Ceres, the heathen goddess of corn. The most important are wheat, barley, oats, maize or Indian corn, rye, rice, and millet; wheat is largely used for bread. It is customary to call all kinds of grain corn.

30. *What is the principal use of barley?*—That of being made into malt, from which ale, beer, and spirits are chiefly prepared.

31. *What is malt?*—Barley, which, by being moistened with water, has begun to germinate, and is afterwards dried.

32. *What are the uses of oats?*—Oats are much used as the food of horses; but when ground into meal they form a nourishing food for the use of man.

33. *Where is Indian corn largely in use?*—In the United States of America, and in various parts of Africa and Asia.

34. *Where are rice and millet much in use?*—In India, where they form the principal articles of subsistence.

35. *What are leguminous or pulse crops?*—Beans, peas, lentils, and some others of less importance.

36. *Are there numerous grasses?*—Yes; they are exceedingly numerous, particularly in England, where they grow in perfection.

37. *What are artificial grasses?*—That is a term often misapplied to such plants as clover and lucerne, which are not, properly speaking, grasses, but are sown for fodder.

38. *Which are esculent vegetables?*—The potato, turnip, cauliflower, cabbage, carrot, beet-root, parsnip, leek, and onion are those which chiefly grow in European countries.

39. *Is the potato a native of Europe?*—No; it was introduced from Chili, in South America, at the close of the sixteenth century.

40. *What are tubers?*—Roundish or oblong knobs which

grow in connection with the roots of certain plants. Potatoes, yams, and arrow-root are examples of tubers.

41. *What are bulbous plants?*—Those which have roots in the form of bulbs.

42. *What is a bulb?*—A rounded root consisting of concentric layers or rings, from the top of which springs the stem; the onion, lily, and tulip are examples.

43. *What are annuals?*—Those plants which grow only for a year or season, and then perish.

44. *What are biennials?*—Those plants which continue two years; the root, stem, and leaves generally grow the first year, and the flower the second; after which they die.

45. *What are perennials?*—Plants which continue a number of years.

46. *What are herbaceous plants?*—Those having soft stems, which easily perish; as in the case of annuals and biennials, also many perennials.

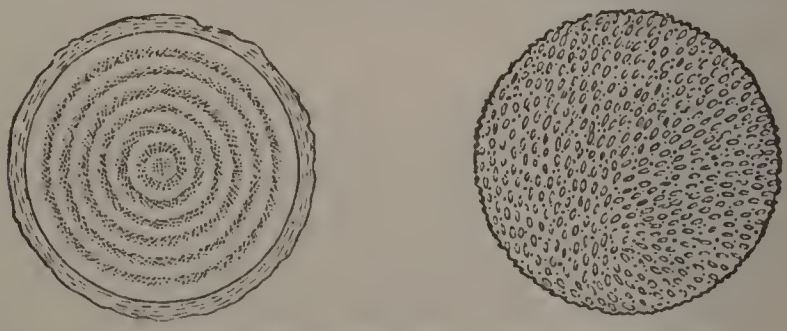
47. *What are orchideous plants?*—A particular order of herbaceous perennials, prized for their beautiful flowers; some of the tropical species, which naturally grow on the boughs of trees, have been introduced into hot-houses, where they are suspended in moss or on blocks of wood.

48. *What are evergreens?*—Trees and shrubs which always retain their verdure, such as the fir, holly, and laurel.

49. *How do evergreens shed their leaves?*—The oldest leaves drop off in spring, when new ones are formed on fresh shoots.

50. *What are deciduous trees?*—Those which shed their leaves annually on the approach of winter.

51. *What are exogenous trees?*—Those which increase in bulk by concentric rings beneath the bark annually. The



Section of an Exogenous and an Endogenous Tree.

trees of Great Britain are of this kind, such as the oak, ash, elm, larch, and others, the age of which can be reckoned by the number of concentric rings.

52. *What are endogenous trees?*—Those which increase in bulk by growth in the centre and upwards, of which the palm is an example.

53. *What are exotics?*—Plants which have been introduced from foreign countries.

54. *What are indigenous plants?*—Those which grow naturally in the country—not exotics.

55. *What is meant by the acclimatising of plants?*—Habituating them to a climate foreign to that to which they have been accustomed.

56. *Mention some of the plants which are largely in use?*—Tobacco, cotton, flax and hemp, sugar-cane, tea and coffee plants—all of which, except flax and hemp, are grown in countries foreign to Great Britain.

57. *Which are the more remarkable fruit-trees and shrubs?*—The vine, date, fig, olive, orange, lemon, peach, apricot, walnut, plum, cherry, apple, and pear, are the most notable in European countries.

58. *Where does the vine principally grow?*—It grows in warm eastern countries, and is often mentioned in the Bible; but it is now grown to a large extent in France, Italy, and on the banks of the Rhine; also in America and Australia.

59. *Which are the smaller fruits best known in Great Britain?*—The gooseberry, strawberry, raspberry, and currant—which grow in several varieties and in great profusion.

60. *Which are the principal timber trees in European countries?*—The oak, ash, elm, beech, birch, hawthorn, sycamore, lime, chestnut, and several kinds of pine.

61. *Which of these trees yield the strongest timber?*—The oak, chestnut, ash, and elm, which are of slow growth; the most durable of all being the oak.

62. *Which are found to be the most valuable for general purposes?*—The different kinds of pine, particularly the larch, of which large plantations are formed.

63. *Which of these trees are valuable for their bark?*—The oak and larch, the bark of which is used for tanning leather.

64. *Which foreign tree is most prized for its timber?*—The mahogany-tree, which grows in the central parts of America, and attains to a great size; also the teak, which is valuable for ship-building.

65. *Which is the tallest tree known?*—The Wellingtonia

Gigantea, which grows in California, and reaches a height of one hundred and eighty feet.

The Animal Creation.

1. *What does the Animal Creation comprehend?*—All living creatures, from the most minute to the most highly organised; at the head of the whole is man.

2. *How is the animal creation sometimes designated?*—As the Animal Kingdom; the science which treats of it is called *Zoology*, from two Greek words signifying a discourse on animals.

3. *What are the ideas that first occur to the mind concerning animals?*—We are struck with their vast multiplicity and wonderful diversity of form and character, the provision made for their support, and their adaptation to the conditions in which they are placed—all which ideas are suggestive of the infinite wisdom and goodness of the Almighty.

4. *Is any animal insignificant?*—No; there are many very humble, and many very troublesome creatures; but when closely examined, all invite our wonder, and each is seen to be an essential part of the plan of creation.

5. *What is meant by the phrase 'lower animals?'*—All animals except man, who is the higher, and, in the language of Scripture, has been endowed with 'dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moveth on the earth.'

6. *Occupying this high position, what is the duty of man to the lower animals?*—His duty is to rule them with kindness, to make use of them, but not to abuse them, and even in killing them for food or for any other necessary purpose, to inflict as little pain as possible.

7. *Do the lower animals prey on each other?*—Such is observed to be the case with many orders of animals, and is apparently according to a design in nature to restrain an undue abundance of certain kinds of animal life.

8. *Give some examples.*—Swallows and some other birds clear the air of gnats, flies, and other insects; these birds are in turn killed by hawks; toads clear the ground of slugs and other crawling creatures; cats destroy mice; weasels rid the fields of vermin; lions, tigers, and panthers keep down the

number of herbivorous beasts, and so on. The examples are endless.

9. *Has nature pursued any plan for ridding the ground of dead animals?*—Yes; the means ordained for this purpose are very remarkable—they consist in giving certain creatures an appetite for decaying animal substances.

10. *Give examples.*—Vultures have the faculty of descrying dead bodies at great distances, and immediately proceed to devour them; but the destruction of such offensive substances is effected quite as well by certain kinds of beetles, ants, and also by maggots.

11. *How are maggots brought into connection with these decaying substances?*—They are produced from eggs laid by certain flies, which, like vultures, wing their way to dead bodies. When the maggots have accomplished their object, they undergo a transformation which brings them to the condition of flies, and these proceed to new subjects for destruction.

12. *What is meant by the balance of nature?*—It has been thought that nature has adjusted a balance between the production and destruction of animal life, and that man may indiscreetly interfere to disturb this arrangement.

13. *Mention an instance of man having disturbed the balance of animal life.*—In France, so many small birds have been indiscreetly killed, that the vegetation is in many places destroyed by caterpillars. Had the birds been let alone, they would have destroyed the caterpillars, and thus the 'balance of nature' would not have been deranged.

14. *How does climate affect animal life?*—In cold countries the number of animals is limited, while in tropical regions the abundance of animal life, particularly as regards insects and reptiles, is excessive and troublesome.

15. *How were animals at one time classed?*—As beasts or quadrupeds, birds, fishes, reptiles, worms, and insects.

16. *Why was this classification abandoned?*—Because it was found to be imperfect, and left out a number of creatures that could not be included in any of these divisions.

17. *Who attempted a new classification?*—Cuvier, a French naturalist, whose arrangement is now adopted. According to this plan, the whole animal kingdom is, in the first place, divided into four provinces or sub-kingdoms.

18. *Mention these sub-kingdoms.*—1. Radiata, or Rayed Animals; 2. Mollusca, or Pulpy Animals; 3. Articulata,

or Jointed Animals; and, 4. Vertebrata, or Back-boned Animals.

19. *How are these departments subdivided?*—Each is divided into classes; classes are divided into orders; orders into families and genera; and the genera into species and varieties.

20. *Does the system include all living creatures whatsoever?*—It is designed to do so; but new animals, particularly of lower kinds, are constantly being discovered, and they require to be added.

21. *What is meant by species?*—It is a term applied to any form which is maintained uniformly through a succession of generations. For example, the horse is one species, and the ass another; and though there is a resemblance between the two, each continues its own species alone.

22. *Are there not exceptions to this rule?*—Only in a slight degree. The horse and ass produce a hybrid called the mule, but the mule has no descendants. Nature seems to interpose a check to such mixtures of races, however much they resemble each other.

23. *Are all dogs of one species?*—Yes; but they are of distinctly-marked varieties, each of which it is important to preserve pure, for any intermixture produces deterioration.

24. *Are not different varieties of sheep sometimes blended with advantage?*—They are; but such artificial breeds are of temporary value; they require constant care, and often also renewal—nature here, again, interposing to preserve distinctness of variety.

25. *Can we conjecture what nature means by preserving distinctness in the classes, species, and varieties of animals?*—It seems part of a wise design to prevent confusion in the animal creation.

26. *What are gregarious animals?*—Those which like to live in flocks and herds; sheep and cattle are gregarious, and so are many birds, such as rooks, and a number of smaller birds at certain seasons.

27. *What are pairing animals?*—Those which pair, male and female, for a season, in order mutually to support their young until they are able to seek food for themselves. Small birds offer an example of pairing animals. A few birds pair for life.

28. *What are oviparous animals?*—Those produced from eggs; they are called oviparous from two Latin words, *ovum*, an egg, and *pario*, I produce. Birds are oviparous.

29. *What are viviparous animals?*—Those produced in a

living state; they are called viviparous from the Latin words *vivus*, alive, and *pario*, I produce.

30. *What are ovoviparous animals?*—Those within which the eggs are hatched before the young are produced; the common lizard is an example.

31. *What are digitigrade quadrupeds?*—Those which walk on their toes, of which the dog and cat are examples; the term digitigrade is from the Latin *digitus*, a finger or toe, and *gradior*, I walk.

32. *What are plantigrade quadrupeds?*—Those which walk on the sole of the foot, of which the bear is an example; the term plantigrade is from the Latin *planta*, the sole of the foot, and *gradior*, I walk.

Foot of Bear.

33. *What are hybernating animals?*—Those which pass the winter in a secluded and dormant state, of which the bat is an example; the term hybernating is from the Latin *hiberno*, I winter.

34. *What are domesticated animals?*—Those which are usually reared in a tame state in association with man, such as the dog, cat, fowls, pigeons, canary birds, the horse, ass, ox, and some others.

35. *What are amphibious animals?*—Those which can live either in water or on land, such as the frog; they are called amphibious, from two Greek words signifying a double life.

36. *What are parasitic animals?*—Those which habitually live within or upon other animals from which they draw their nourishment. There are parasitic plants as well as animals.

37. *What are reckoned the lowest forms of animal life?*—Those belonging to the Radiata.

38. *Mention some of the Radiata.*—The *Infusoria*, or animalcules, so small as to be invisible to the naked eye, and usually found in stagnant water, also in sour beer, and some other liquids.

39. *Are these small creatures produced spontaneously in the liquids in which they are found?*—No; no animal whatever can be produced but from the germ of previous animals like itself. In animal, as in vegetable life, there is no spontaneous production.

40. *Was not the contrary once believed?*—It was. In ancient times there prevailed a belief that certain insects were pro-

duced by putrefaction ; and not long since, there was a notion that small eels could be produced by horse-hairs dropped into stagnant water. All such notions are now exploded.

41. *But have not conditions a powerful effect on animal life?*—Certainly ; but the conditions—as in the souring of beer—only aid the principles of reproduction. Without the conditions, the germ of the animal would remain dormant.

42. *What is the appearance of the Infusoria?*—They are of various grotesque forms. Some resemble branches of plants, some are like tulips, and some are twisted like screws. Those of one order are called *Rotifera*, from the rotatory motion of certain organs which surround the mouth.

Various forms of Animalcules.

43. *How do these strange creatures propagate?*—Some lay eggs; but the greater number divide their bodies into parts, each of which becomes a new animal.

44. *What are Zoophytes?*—Radiata, so named from their resemblance to growing plants, and which seem to form a connecting-link between animal and vegetable life.

45. *What are the Corallifera?*—One of the orders of zoophytes, which raise great structures of coral from the bottom of the sea.

46. *Have sponges any connection with this order?*—Yes ; they are allied to the Corallifera, and are found chiefly in the Red and Mediterranean Seas. What we call sponge is the framework of the zoophyte cleared of the living matter.

47. *What are Polypi?*—A class of the radiata, so called from two Greek words signifying many feet. Some of them form floating fleshy masses, without organs of sense, and possess numerous arms or tentacula. When cut in pieces, each becomes an individual polypus.

48. *What are the Medusæ?*—Another class of the radiata, resembling floating masses of jelly, with depending tentacula, which may be seen in the ocean and also near the coast. The Physalis is a good example.

49. *What can be the use of the medusæ?*—They are probably of use in furnishing food to whales, also to the herring, and some other kinds of sea-fish.

50. *What are the Entozoa?*—They are a class of the radiata, which parasitically live within the bodies of other animals.

51. *Mention one of the entozoa.*—The hydatid, which is sometimes found in the brains of sheep, causing a fatal disease; the germs of such creatures are understood to be introduced through the food.

The Physalis or Portuguese Man-of-war.

52. *What kind of animals are the Mollusca, which form the second sub-kingdom?*—They consist of several classes of soft and pulpy animals, including some shell-fish and snails.

53. *What are univalve shells?*—Those having one shell, of which there is an example in the limpet.

54. *What are bivalve shells?*—Those having two shells, of which there is an example in the oyster.

55. *What is meant by Conchology?*—The branch of zoology connected with the study of shells.

56. *What animals are included in the sub-kingdom Articulata?*—Certain jointed animals, of which there is a well-known class called the *Crustacea;* in it are included crabs, lobsters, prawns, and barnacles.

57. *What is the barnacle?*—It is a shell-fish which attaches itself by a stem to the bottoms of ships, or any floating piece of wood; also to branches of trees which hang over and touch the salt water. At one time it was thought that the barnacle hatched a kind of goose—a belief now known to be quite erroneous.

58. *Mention another well-known class in the Articulata.*—The class Insecta, in which are comprehended an innumerable

Examples of Insects belonging to the orders Coleoptera (5), Orthoptera (1), Hymenoptera (4), Lepidoptera (3), and Diptera (2).

variety of genera and species, some being small creeping things, others being winged.

59. *Mention some of the insect orders.*—The *Coleoptera*

(beetles, glow-worms), the *Orthoptera* (grasshoppers), *Hymenoptera* (bees), *Lepidoptera* (butterflies, moths), and *Diptera* (flies).

60. *What is meant by 'insect transformation?'* — The changes which insects undergo. The butterfly, for example, lays a great number of eggs, from each of which issues a ringed worm called the *larva*, or, familiarly, the caterpillar. In time it assumes a shorter and harder form, and falls into a state of torpor, in which it is called the *chrysalis*. At length the exterior bursts, and there issues the butterfly or perfect insect.

Butterfly Transformations.

61. *What is remarkable about the eyes of insects?*—They are usually much projected, and consist of a vast number of distinct lenses, which enable them to see on all sides.

62. *How many lenses have been counted in the eye of a butterfly?*—Seventeen thousand, making for the two eyes thirty-four thousand, each possessing the power of an eye. In addition to composite eyes of this kind, the bee has three simple eyes on the top of its head.

63. *What are the antennæ of insects?*—The antennæ are feelers—sometimes long, sometimes branched and feathered in the most beautiful manner, and with endless variety—projected from the front of the head, by which they can feel their way in the dark, or examine the nature of any object which they approach.

64. *What appears remarkable in the house-fly?*—Its power of walking with its back downwards on the ceiling. The soles of its feet are provided with suckers, and the air being exhausted at every step, the animal holds readily on.

65. *Is there anything else curious about the house-fly?*—Like the bee and some other insects, the house-fly possesses a trunk, or proboscis, with which it draws up food to its mouth.

66. *How many legs have the bee, house-fly, and other flying insects?*—Six.

67. *Have not some insects the faculty of spinning?*—Yes; the most remarkable is the *Bombyx mori*, or silk-worm.

68. *Explain how this insect spins.*—When the silk-worm is in the caterpillar or larva state, and about to become torpid, it winds from its mouth a clue of viscous thread, in which it

enshrouds itself. This covering is called the *cocoon*, from which the fine thread is unwound by machinery, and forms silk.

69. *Do spiders belong to this sub-kingdom of animals?*—Yes, the house-spider, tarantula, and scorpion are included in the order *Arachnida*. The house-spider and small gossamer spider, as is well known, spin fine threads from the hinder part of their bodies, with which they weave webs to catch flies—all have eight legs.

70. *Mention a very small animal belonging to the Arachnida.*—The mite in decayed cheese, which has eight legs, and breathes through tubes interspersed throughout its body.

71. *What is the fourth sub-kingdom in the animal creation?*—The Vertebrata, or animals with back-bones.

72. *State how the Vertebrata are classified.*—They constitute four classes—*Pisces*, or Fishes; *Reptilia*, or Reptiles; *Aves*, or Birds; and *Mammalia*, or Suck-giving Animals.

73. *What is remarkable about Fishes?*—They swim in the water, and propel themselves by fins; they breathe through gills, and their blood is cold.

74. *What is the nature of the Reptilia?*—They mostly creep on four feet, and, like the fish, are cold-blooded; but they breathe with lungs.

75. *Mention some of the orders of reptiles?*—The *Sauria* compose an important order, in which are included the crocodile, alligator, lizard, and chameleon. The order *Ophidia* includes serpents and snakes. The tortoise and turtle are included in the order *Chelonia*, and the toad and frog in the *Batrachia*.

76. *What is the early condition of toads and frogs?*—They pass through the state of tadpoles, living like fishes, before they appear as perfect animals.

77. *Describe the Birds, or third class of Vertebrata.*—All are covered with feathers, they walk on two feet, they fly by means of wings, and they are reproduced from eggs.

78. *How many orders are in this class?*—Seven—the *Natatores*, or Swimmers; the *Grallatores*, or Waders; the *Cursores*, or Runners; the *Rasores*, or Scrapers; the *Insessores*, or Perching Birds; the *Raptores*, or Rapacious Birds; and the *Scansores*, or Climbing Birds.

79. *Mention some of the best-known Natatores.*—Ducks, geese, swans, and sea-gulls, which, like others in the same order, are distinguished by web-feet for swimming.

80. *Mention some of the Grallatores?*—The stork, heron, crane, pelican, and snipe. All have long legs, enabling them

Examples of each of the Seven Orders of Birds.

to wade in marshes, on the sea-shore, and within the margins of rivers, where, with their long bills, they pick up small fish and other food.

81. *What birds are included in the Cursores?*—The emu, cassowary, nandu, and ostrich, all of which possess long and powerful limbs for running.

82. *Explain the nature of the Rasores.*—The rasores, as their name imports, are birds which scrape for their food; familiar examples are the common hen, pheasant, turkey, peacock, grouse, and pigeon. The rasores are otherwise called *Gallinaceous* birds, from the Latin word *gallus*, a cock.

83. *How are the pigeon tribes separately distinguished?*—As the *Columbidæ*, from the Latin, *columba*, a pigeon. They embrace numerous species and varieties, the turtle-dove being one of them.

84. *What birds are included in the order Raptores?*—The vulture, eagle, falcon, hawk, and owl, are well-known examples of this rapacious order of birds.

85. *Which are the Insessores, or perching birds?*—Many small birds, including the sparrow, thrush, swallow, nightingale, lark, bullfinch, magpie, crow, and rook; also a beautiful animal, the bird of paradise, and many others.

86. *Mention some examples of the Scansores, or climbing birds.*—The parrot, cockatoo, and wood-pecker.

87. *Describe the class Mammalia, or suck-giving animals.*—This is the highest kind of animals, as regards either organisation or intelligence; the class is divided into various orders.

88. *Refer to some of the orders.*—One consists of the *Marsupialia*, or pouched animals, among which are included the kangaroo and opossum, which carry their young in pouches.

Another order is the *Monotrémata*, to which the ornithorhynchus of Australia belongs.

89. *Mention another order.*—The *Insectivora*, which includes hedgehogs, moles, shrews, and other obscure animals.

90. *Proceed.*—The order *Rodentia*, or gnawing animals, comprehending the squirrel, rat, mouse, beaver, hare, and guinea-pig.

Examples of Animals belonging to the orders Marsupialia, Insectivora, Rodentia, Ruminantia, Pachydermata, and Carnivora.

91. *Are there not some marine mammalia ?*—Yes ; the order of the *Cetacea*, which includes dolphins, porpoises, and whales ; and the family of *Phocidæ*, or seals.

92. *What animals are included in the order Ruminantia ?*—The camel, stag, antelope, goat, sheep, cow, giraffe, and buffalo ; all live on grass, and derive their name as an order, from 'ruminating' or chewing the cud.

93. *Which compose the order Pachydermata ?*—This term implies animals with a thick skin ; in this order are included the elephant, rhinoceros, hippopotamus, tapir, hog, horse, and ass.

94. *Which animals are comprehended in the order Carnivora ?* Those which live on flesh, and are provided with teeth for the purpose ; in this order are very ferocious wild animals.

95. *How is the order carnivora divided ?*—Into five families, the first of which is the *Felidæ*, or cat-tribe, including the domestic and wild cat, lion, tiger, leopard, and lynx ; all possessing great power of leaping on and devouring prey.

96. *Which is the second family of carnivora ?*—The *Canidæ* or dog-tribe, which includes the dog, wolf, fox, and jackal.

97. *Which animals compose the order Cheiroptera ?*—The cheiroptera are generally creatures which fly about by night, and live on insects, of which the bat is a well-known specimen.

98. *What does Linnæus call this order of animals ?*—He

employs the Latin term *Vespertilio*, which is significant of their flying about in the evening.

99. *What animals compose the order Quadrumana?*—All kinds of monkeys and lemurs; the term *quadrumana* signifying four hands, which these creatures may be said to possess for the sake of climbing. In this order are included the orang-outang, the chimpanzee, and the gorilla—animals approaching in figure to man.

100. *To what order is man assigned?*—The order Bimana, or two-handed, in which he stands alone.

Ethnology.

1. *What is Ethnology?*—It is the branch of knowledge which treats of the varieties or different races of men, their manners, and character; the term is from the Greek *ethnos*, a nation.

2. *In what respect is man at the head of the animal creation?*—He is so as regards superiority of structure and intelligence, and as possessing a moral nature, or consciousness of right and wrong.

3. *Why is man said to be an accountable being?*—Because, being able to distinguish right from wrong, he is accountable to God for his actions.

4. *In what respect does the intelligence of the lower animals differ from that of man?*—The intelligence of the lower animals is of an inferior character, ordinarily defined by the term *instinct*, by which they are guided, and can be cultivated only to a limited extent; whereas the intelligence of man is large and expansible, and may be transmitted according to the lessons of experience from generation to generation.

5. *What are the varieties in the races of man?*—There are usually said to be five varieties—the Caucasian, the Mongolian, the Malayan, the American Indian, and the Negro.

6. *Describe the Caucasian.*—The Caucasian variety of man is white, or nearly so, and is the most improvable of all the races; it is the Caucasian variety which inhabits the greater part of Europe.

7. *Why is the race called Caucasian?*—Because it was supposed to have originated in, and spread out from, the mountainous district of the Caucasus in Asia.

8. *What is the Anglo-Saxon race?*—It is that branch of the Caucasian variety which takes its name from certain German or Teutonic tribes who settled in Great Britain.

Examples of the Caucasian, Mongolian, Malayan, American Indian, and Negro races.

9. *What is the Celtic race?*—It is another branch of the Caucasian variety, which settled in the British Islands, in France, and in other parts of Europe, at a very early period.

10. *Describe the Mongolian variety.*—The Mongolians are so called from the Mongols, a people of Central Asia; they have squarish heads, flattish faces, olive complexions, and eyes pointing obliquely downwards, and they are remarkable for adherence to old usages; they inhabit Central Asia, China, Japan, and some other countries.

11. *Describe the Malayan variety.*—The Malayans are so called from the peninsula of Malaya, in India beyond the Ganges; they have a brown skin, heads slightly narrowed at the top, and are reputed to be fierce and often treacherous.

12. *Describe the American Indian variety.*—The American Indians have a narrow head, red or copper-coloured skins, and can scarcely be induced to adopt settled habits.

13. *Describe the Negro variety.*—The negro races have black skins and eyes, receding foreheads, woolly hair; in character, they are lively and docile, and disposed to submit to a state of servitude; their native country is Africa, whence great numbers have been carried off as slaves.

14. *What is a slave?*—A slave is a person deprived of his civil rights, and who, being bought like one of the lower animals, is dependent in all respects on the will of his owner.

15. *What are civil rights?*—The right which every one has by nature to dispose of his own person, to cultivate his mind, and to improve his condition by any honest line of industry that is suitable to his capacity—the enjoyment of such rights being called *freedom*.

16. *What are serfs?*—Serfs were persons held in perpetual bondage, sometimes as domestic servants, but more frequently as rural labourers, who were sold along with the estates on which they lived.

17. *Was the condition of serfdom common?*—Yes; serfdom or some other form of slavery was common in all ancient nations; and, until lately, it existed to a large extent in Russia.

18. *What circumstances tend to degrade races of men?*—A long course of misusage, want of proper food and raiment, want of education, and hopelessness in the future, all tend to brutalise races.

19. *Is colour in the skin an effect of circumstances?*—To a certain extent this is the case; it being observable that exposure to the sun in hot climates tends to darken the complexion; but from whatever cause, the colour in the negro races is not on the surface of the skin, but seems part of the natural constitution.

20. *Explain the nature of the skin.*—The skin is a porous covering of three layers; the outer layer, which is very thin, is called the cuticle or *epidermis;* and the innermost is the *cutis vera,* or true skin; between the two is a layer of pulpy net-work, called the *rete mucosum,* in which is the colouring matter of the darker races.

21. *What are the senses?*—Sight, hearing, taste, smell, and touch.

22. *Where is the recognised seat of the mind?*—In the brain, or centre of sensation; an organ charged by Almighty Power with the functions of thought—the mind itself, which acts through the brain, being regarded as a spiritual essence destined to survive the dissolution of matter.

23. *Are we to understand that man consists of two things, a perishable body and an immortal spirit?*—Yes; it is on the basis of this immortality of the spirit or soul after death that man rests his religious hopes and feelings.

24. *What are heathens?*—People who have no proper conception of the true God, and worship idols; the word pagans has a similar meaning.

25. *In what state are mankind at present?*—A large number are in the condition of heathens and savages; others are in a half-civilised state, and in the way of improvement; and lastly, there are nations, such as those of Europe generally, in an advanced state of civilisation and refinement.

Chronology.

1. *What is Chronology?*—It is that department of knowledge which relates to the reckoning of time; the term is from the Greek *chronos*, time, and *logos*, a discourse.

2. *What is an era?*—An *era* is a period commencing with a fixed point of time, from which a series of years is begun to be reckoned—as, for example, the Christian era, dating from the birth of Christ; the Hebrew era, from the creation of the world, as narrated in Genesis; and the Roman era, from the traditionary date of the foundation of Rome, 753 B.C.

3. *When did the era of the ancient Greeks begin?*—It began with the first year of the first Olympiad, which is calculated to have commenced at midsummer 776 B.C.

4. *What is the Mohammedan era?*—It commences with the 13th of September 622 A.D., the date of the flight of Mohammed from Mecca to Medina, and is called the *Hegira* ('flight').

5. *Has every country reckoned the year as of the same length?*—No; the general ignorance of the true length of a year has given rise to considerable differences of reckoning, a circumstance which causes perplexity in comparing one era with another.

6. *What is a Solar Year?*—It is the length of time occupied by the earth in its revolution round the sun; and averages 365 days, 5 hours, 48 minutes, and 49 seconds.

7. *What was the length of the year as calculated by the ancient Egyptians?*—It was 365 days, by which short reckoning the festivals gradually shifted from their true anniversary.

8. *What was the length of year as calculated by the Greeks?*—It was $365\frac{1}{4}$ days.

9. *What was the character of the Roman reckoning?*—It was confused and unsatisfactory, until the calendar was rectified by Julius Cæsar.

10. *What was the Julian Calendar?*—It consisted in the adoption by Julius Cæsar of the Greek plan of reckoning, that the year should consist of $365\frac{1}{4}$ days. To dispose of the odd quarter, the 24th of February was doubled every fourth year; the day so interposed being called *bissextile*.

11. *What was the defect of the Julian calendar?*—It made the year about 11 minutes too long, and this extension amounted to 3 days in nearly 400 years.

12. *How long did the Julian calendar remain in use?*—Until 1582, when Pope Gregory XIII. abolished it, and instituted a a new and improved calendar, which, from his name, is known as the Gregorian calendar.

13. *Describe the Gregorian Calendar.*—It consisted, in the first place, of dropping 10 days, and then rectifying the future excess of nearly 11 minutes annually.

14. *How was the excess rectified?*—By the simple plan of arranging that the last year of each century should *not* be a leap-year, unless it were also the last year of a period of four centuries. This rectification errs by only one day in 4000 years.

15. *What are 'Old' and 'New Styles?'*—They are the methods of reckoning prescribed by the Julian and Gregorian calendars.

16. *Was new style generally adopted?*—No; it was at first adopted only by Roman Catholic states; some of the chief Protestant states adopted it in 1700; Great Britain and Ireland adopted it in 1752.

17. *How was new style adopted in Great Britain and Ireland?*—It was adopted by an act of parliament, 1751, which enacted that 11 days should be omitted after the 2d of September 1752, so that the 3d day should be the 14th.

18. *What is now the difference between old and new style?*—The difference is 12 days, for as the year 1800 was not a leap-year, 1 day is added to the former number.

19. *What Christian nation still adheres to old style?*—Russia. Eastern Christians also adhere to it.

20. *Why is a leap-year so called?*—Because every fourth year a day is leaped over. Common years advance a single day; if the 1st of March is a Monday, next year it will be Tuesday; but if leap-year, it will be Wednesday—leaping over Tuesday.

21. *How do we know which is a leap-year?*—By dividing the number of the year by 4, if nothing remains, it is a leap-year. This rule, however, will not hold good with the year 1900, as it is not a four-hundredth year (see Question 14).

22. *What is meant by a Civil Year?*—It is a year as commonly reckoned, consisting of 365 days for common years, and 366 days for leap-years.

23. *When does the civil year begin and end?*—It begins at 12 o'clock midnight of the 31st of December, and ends at 12 o'clock on the night of the 31st of December.

24. *When did the ancients begin the year?*—The Athenians

began the year in June; the Romans first in March, and afterwards in January—the practice was very various.

25. *What was the practice previous to the reform of the calendar?*—The common legal practice was to begin the year on the 25th of March—a most awkward arrangement, for the early part of March belonged legally to one year, and the latter part to another. To add to the confusion, the 1st of January was *popularly* recognised as the beginning of the year.

26. *When was the New-year's Day changed from the 25th of March to the 1st of January?*—This change was effected gradually. The 1st of January was adopted legally by France in 1563, by Scotland in 1600, and by England and Ireland at the change of the style, 1752.

27. *Give an example of the method of writing the dates of events previous to* 1752.—The execution of Charles I. offers a well-known example. It occurred January 30, 1648—1649; that is to say, 1648 by the old reckoning, and 1649 by the reckoning now in use.

28. *When does a century begin and end?*—It begins with 1, and ends with 100; for example, the 18th century began with 1701, and ended with 1800; accordingly, 1801 was the first year in the 19th century.

29. *What is the origin of the term 'Month?'*—It signified originally the time occupied by the moon in revolving round the earth, which is rather more than 29½ days; 28 days are sometimes, for convenience, called a lunar month.

30. *What is a Civil or Calendar Month?*—It is a certain number of days, 30 or 31, in all the months but February, which has 28 in common, and 29 in leap-years.

31. *When were the months named and arranged?*—The calendar months, twelve in number, received their names from the Romans, and were arranged by Julius Cæsar almost as they now appear.

32. *Mention why the present names were given to the respective months by the Romans*—

1. January is so called from Janus, who, according to the Roman mythology, was god of the year, and presided over the commencement of all undertakings.

2. February takes its name from the Latin *februo*, I purify; because in this month the Romans had certain religious ceremonials designed for moral purification.

3. March is named from Mars, the god of war, and supposed father of Romulus, the founder of Rome.

4. April is derived from *aperio*, to open, because in this month vegetation began to open and bud.

5. May is either from *majores*, old men, or from *Maia*, mother of Mercury, to whom sacrifices were made on the first day.

6. June is either from Juno, or from *juniores*, young men, to whom the month was dedicated.

7. July is from Julius, and was so named by Augustus, in honour of Julius Cæsar.

8. August is named in honour of Augustus.

9. September is from *septem*, seven; this having been the seventh month, when the Romans began the year with March.

10. October; 11. November; 12. December; these names respectively signify eighth, ninth, and tenth, and were given when March was reckoned the first month.

33. *How did the Romans divide the month?*—They divided the month into three periods—*Calends*, *Nones*, and *Ides*, and an event was said to have occurred so many days before these divisions, as the case might be.

34. *Had the Greeks calends?*—No; hence the ironical Roman phrase, *ad Græcas Calendas*, 'at the Greek calends,' meaning *never*. When a thing is said to be postponed 'to the Greek calends,' it is equivalent to saying that it 'will never take place.'

35. *What is a week?*—It is a period of seven days, or about a quarter of a lunar month; the week is a very ancient division of time, not only among the Hebrews, as derived from the seven days of creation, but among the ancient Egyptians, Chinese, and Hindus.

36. *What is the origin of the English names of the days of the week?*—The names are derived from the Saxons and Scandinavians, and are as follows: Sunday, is named from the Sun; Monday, from the Moon; Tuesday, from Tuesco, the god of war; Wednesday, from Woden, the chief Scandinavian deity; Thursday, from Thor, the Saxon god of thunder; Friday, from Friga, the wife of Woden; and Saturday, from Seater, the Scandinavian equivalent for Saturn.

37. *What are the names of the days of the week employed in the records of parliament?—Dies Solis*, for Sunday; *Dies Lunæ*, Monday; *Dies Martis*, Tuesday; *Dies Mercurii*, Wednesday; *Dies Jovis*, Thursday; *Dies Veneris*, Friday; and *Dies Saturni*, Saturday.

38. *What is the origin of these Latin names?*—They are derived from the names of heathen deities, according to the Roman mythology. The French names of the days of the week are for the most part derived from these Latin names—for example, *Mercredi*, Wednesday; and *Mardi*, Tuesday.

39. *What is the origin of the word 'Sabbath?'*—Sabbath is from a Hebrew word signifying *rest*, and was applied to the last or seventh day of the week, because God is represented as having rested from the work of creation on that day, and ordained in commemoration of that event, that the day should ever be marked by a total cessation of labour. Among Christians, Sunday is the day of rest or Sabbath, and is otherwise termed the 'Lord's Day.'

40. *When did the Hebrews begin their weekly Sabbath?*—They began it at sunset on the sixth day (Friday), and ended it at sunset on the seventh (Saturday); this arrangement being determined by Scriptural phraseology—'and the evening and the morning were the first day.'

41. *Has any attempt ever been made to substitute new divisions of time for the ordinary months and weeks?*—Yes; the French revolutionists, attempted by law to introduce a new calendar; in 1793 they decreed that the era of the republic should begin with, or be dated from, the 22d of September 1792.

42. *What principle did the French adopt as regards the months?*—They divided the year into twelve months of 30 days each, leaving the extra five days in common years, and six in leap-years to be devoted to festivals or holidays.

43. *Mention the names of the months according to the French revolutionary calendar.*—Beginning with the 22d of September, they had as follows; *Vendemiaire*, or Vintage month; *Brumaire*, Fog month; *Frimaire*, Sleet month; *Nivose*, Snow month; *Pluviose*, Rain month; *Ventose*, Wind month; *Germinal*, Spring or Sprouting month; *Floreal*, Flower month; *Prairial*, Pasture month; *Messidor*, Harvest month; *Thermidor*, Hot month; and *Fructidor*, Fruit month.

44. *Mention the festivals on the extra five days?*—The 1st festival (September 17) was dedicated to the Virtues; the 2d to Genius; the 3d to Labour; the 4th to Opinion; and the 5th to Rewards.

45. *What did the French substitute for weeks?*—They divided each month into three parts of ten days each. These parts were called *Decades*, from the Greek word *deca*, ten.

46. *What were the names of the days in a Decade?*—The names, adopted, with the exception of the last, from the Latin numerals, signifying first day, second day, &c., were as follows: *Primidi, Duodi, Tridi, Quartidi, Quintidi, Sextidi, Septidi, Octidi, Nonidi*, and *Decadi*. The last day, *Decadi*, was the day of rest.

47. *How long was the French revolutionary calendar in use?*

—It remained in use until, by a decree of Napoleon, the old calendar was resumed on the 1st of January 1806.

48. *What is a Cycle?*—A cycle is a circle or period of time, on the completion of which certain phenomena return in the same order.

49. *Describe a Lunar Cycle.*—A lunar cycle is a period of nineteen solar years, during which the phases of the moon occur differently every year, and after which they recommence in the same order.

50. *What is a Metonic Cycle?*—That is a name often given to a lunar cycle, and is so called from its discoverer, Meton, who flourished at Athens about 432 B.C.

51. *Why does a Lunar or Metonic Cycle occupy nineteen years?*—Because the period of nineteen years is nearly equal to 235 lunations (revolutions of the moon round the earth), and it is only after going through this circle of time, that the new and full moons occur on the same day of the year as previously.

52. *What is the 'Golden Number?'*—It is the number of any year in the series of nineteen composing a lunar cycle. For example, the golden number of the first year is 1, and of the last year 19.

53. *Why is it called the 'Golden Number?'*—Because the number of each year in the lunar or Metonic cycle was ordered by the Greeks to be inscribed in letters of gold on pillars of marble.

54. *How do we learn what is the golden number of any particular year?*—By a simple arithmetical calculation, based on the principle that in the year 1 B.C. the new moon fell on the 1st of January, and will fall on the same day every 19th year from that time.

55. *Give the rule for finding the golden number.*—Add 1 to the number of years, and divide by 19; the quotient will be the number of cycles since 1 B.C., and the remainder will be the golden number; if there be no remainder, then 19 is the golden number, and that year is the last of the cycle.

56. *Present an example.*—Wanted to know the golden number for 1865, add 1, which will make 1866; divide by 19, the quotient is 98, and the remainder is 4, which is the golden number for 1865—in other words, the lunar cycle which comprehends 1865 began in 1862.

57. *What is the rule for determining Easter in any particular year?*—Easter is always the first Sunday after first full moon on or after the 21st of March. The Easter festival is

therefore never before the 22d of March, or after the 25th of April.

58. *What is a Sidereal day?*—It is the time occupied by the earth in its diurnal rotation, which is 23 hours, 56 minutes, and 4 seconds.

59. *Why is the term 'sidereal' employed?*—Because, on making a complete rotation, the earth has the same spot opposite a fixed star—the term sidereal being from the Latin *sidus*, a star.

60. *What is a Solar day?*—It is the time occupied by the earth in returning to the same position relative to the sun, which is, on an average, 24 hours.

61. *Why should the earth require 24 hours to return to be opposite the sun, while it returns to be opposite a star in 23 hours, 56 minutes, and 4 seconds?*—Because stars are fixed points in the heavens, while the sun daily shifts a little in its relative position.

62. *What is a Civil day?*—It is a solar day, or, more strictly, 24 hours, which length of time is adopted as a convenient measurement by civil society.

63. *What is meant by 'mean time?'*—It is time as shewn by clocks and watches, which give only a regular average of 24 hours a day, and not the precise length of the fluctuating solar day. This general average, one part of the year with another, is *mean* time.

64. *Do sun-dials shew mean time?*—No ; sun-dials indicate the exact or true time according to the sun, and therefore do not correspond exactly with clocks and watches.

65. *How has the civil day been divided?*—Into 24 hours, each hour consisting of 60 minutes, and each minute consisting of 60 seconds. Usually, the 24 hours of the day are divided into two portions of 12 hours each—12 o'clock midnight to 12 o'clock noon, and 12 o'clock noon to 12 o'clock midnight.

66. *Is the division of time into hours natural or artificial?*—The division is quite artificial ; there is nothing in nature to suggest any uniform subdivision of the day.

67. *How are the hours designated?*—The hours from 12 noon to midnight are designated *post meridiem* (after mid-day), and the hours from midnight to noon are said to be *ante meridiem* (before mid-day). The abbreviations P.M. and A.M. are ordinarily employed.

68. *When does the civil day begin?*—Immediately after

12 o'clock midnight, but this is a comparatively modern arrangement.

69. *What is Horology?*—It is the department of chronology referring to hours and their subdivisions; the term is from two Greek words signifying hour and discourse.

70. *When were clocks invented for measuring time?*—The earliest known clock was invented by Henry de Vic or De Wyck, a German, in 1379; but the pendulum, as a regulating power in clocks, was introduced by Huygens, a celebrated Dutch astronomer, as late as 1657.

Language, Literature, &c.

1. *What is Philology?*—It is the science which treats of the nature and relations of languages.

2. *What is Etymology?*—It is a department of Philology devoted to the examination of words, as regards their origin and formation.

3. *How many languages are there in the world?*—There are many hundreds, but certain groups of them are so like one another, that the members of each group may be considered as varieties of one tongue.

4. *What are the Semitic languages?*—They are those languages spoken by the nations which sprung immediately from Shem, one of the sons of Noah; to this class belong the Hebrew, the Chaldee, and the Arabic.

5. *What are the Indo-Germanic or Indo-European languages?*—They are a numerous class, prevailing in Asia and Europe, traceable to tribes who at a remote period called themselves Aryans, and who peopled the north of India and Persia: to this group belong the Sanscrit, Hindustani, Greek, Latin, Celtic, German, English, and many other tongues.

6. *What is meant by 'classical language?'*—The term is applied to a pure and dignified form of language, adapted for expressing the higher order of thoughts; the word *classical* is from the Latin *classis*, signifying a class or order of Roman citizens.

7. *Which languages are ordinarily spoken of as classical?*—The ancient Greek and Latin languages, both now disused as spoken tongues, but known to us by the finest compositions of ancient literature. It is also customary to speak of the Sanscrit as the classical language of India.

8. *What is meant by the 'divarication of languages?'*—It means the breaking of a language into two or more separate languages, through corruptions and other circumstances.

9. *Give an example.*—The modern French, Italian, Spanish, and Portuguese are divarications of the Latin; the peculiarities in each being traceable to some local circumstances.

10. *What is a Dialect?*—It is a peculiar or local form of a language; the Lowland Scotch speech, for example, is regarded as a dialect of the English.

11. *What is meant by a 'patois?'*—'Patois' is a French term for the corrupted dialect spoken by the illiterate classes, which is rarely seen in literature.

12. *What is Literature?*—It is the writing contained in books in ancient and modern times, and has a variety of departments—history, theology, philosophy, poetry, prose fiction, and other kinds of writing.

13. *Of what does ancient literature chiefly consist?*—Of the writings of the Hebrews, Chinese, Hindus, Greeks, and Romans.

14. *What are the best specimens of ancient Hebrew literature?*—The books of the Old Testament.

15. *What is the Talmud?*—It is the name given to the book which comprehends the Jewish law, both written and oral, together with the commentaries of learned Hebrews. Those who attach importance to these traditions are called Talmudists. The word *Talmud* is from the Hebrew *lamad*, to teach.

16. *What is meant by 'the Canon of Scripture?'*—It signifies the Scriptures which have been established as authentic by the decision of councils of the church; the term *canon*, in Greek, means a rule or standard. The 'sacred canon' comprehends the whole of the Scriptures except the Apocrypha.

17. *What is meant by the Apocrypha?*—The term *Apocrypha* is from a Greek word signifying that which is hidden, but latterly anything spurious, or false, or without authority; it is now applied to certain books which have been rejected from the canon of Scripture as being of doubtful authenticity, or not worthy to be included in the Holy Bible.

18. *What is the meaning of the word 'Bible?'*—It is from the Greek *biblos*, a book, and is applied to the whole of the Old and New Testament Scriptures.

19. *What are the languages in which the Bible was originally written?*—The old Testament was written mainly in

Hebrew, but partly also in Chaldee, and the New Testament in Greek.

20. *What is meant by a 'Targum?'*—The word *targum* is Hebrew, and signifies *interpretation;* it is applied to certain ancient Chaldee versions of the Pentateuch and other parts of Scripture; also to some versions of more modern date; there are therefore several Targums.

21. *What is Rabbinical Literature?*—It consists of a vast array of works, chiefly in Hebrew and Arabic, by learned *rabbis* (masters or teachers), which treat mainly of questions springing out of the law, but occasionally branching out into the wider realms of philosophy, history, grammar, and poetry. Rabbinical literature began after the return from captivity; in fact, it is just another name for Jewish literature.

22. *Who were the Essenes?*—They were a fraternity among the Jews previous to and after the birth of Christ; their history is involved in considerable obscurity, but it is known that they were ascetics who aspired to excessive ceremonial purity according to the Levitical law.

23. *Who were the Gnostics?*—They were early Christian sects, who derived their name from the Greek word *gnosis*, knowledge, as applied to revealed religion. They considered that, from their superior philosophical perceptions, they had come to 'know' the nature of those truths which common Christians could only 'believe.' Hence they elevated *Gnosis* above *Pistis* (faith). The religious belief of the Gnostics was tinctured with the mysticism of the East and the philosophy of the Greeks.

24. *What was the Septuagint?*—It was a Greek version of the original Hebrew Old Testament, executed, according to the story recorded by Josephus and Philo, about 280 years B.C., and was so called from being, according to the story recorded by Josephus, the work of *seventy*, or, more strictly, *seventy-two* translators.

25. *What is meant by 'the Vulgate?'*—It signifies a translation of the Scriptures into Latin—which was the vulgar or common tongue of the Romans—and is said to have been executed about 380 A.D.

26. *When was the first English version of the whole Bible executed?*—In 1535, by Myles Coverdale; but the New Testament and a part of the Old had been executed a few years previously by William Tyndale.

27. *When was the present authorised version of the Bible executed?*—It was prepared between 1607—1610, by a body of eminent scholars, at the request of James I. of England,

and is prized for its fidelity; a considerable portion of it, however, is taken from the previous excellent version of Tyndale.

28. *What is meant by 'an apostle?'*—The term apostle is from the Greek *apostolos*, signifying one who is deputed or sent from—that is, 'from God,' and is applied in the New Testament to one who is commissioned to preach the Gospel of Christ.

29. *What is meant by 'Gospel?'*—Gospel is from the Saxon *god* or *good*, and *spell*, a narration, and signifies a good history, or intelligence of good events—good news.

30. *What was the ancient form of books?*—Books were originally written on finely-prepared skins or parchment, united together in rolls; all the Scriptures in use among the ancient Hebrews were in this form.

31. *What was papyrus?*—It was a preparation of the stems of the papyrus, an Egyptian plant, employed as a substitute for parchment; the word *paper* is derived from the *papyrus*.

32. *What is the origin of the word 'library?'*—It is from *liber*, Latin for book.

33. *Explain the origin of the word 'volume.'*—The books of the Romans were in the form of rolls wound round small wooden rollers; these roll-books were called *volumina*—hence the English word *volume*.

34. *How were books prepared before the invention of printing?*—Among the Greeks and Romans, by professional transcribers, who were usually employed to write copies of books for general circulation; in the middle ages, when books assumed their present shape, the work of transcription was executed by certain industrious orders of monks. The process of transcription was tedious and costly.

35. *What are Palimpsests?*—A palimpsest is a book in parchment, from which the ancient classical writing was effaced, in order that the pages might receive writing of a later, generally monkish kind—the want of paper necessitating this extraordinary expedient: the word *palimpsest* is from two Greek words, signifying to efface and to use again.

36. *Where are palimpsests to be seen?*—A few may be seen in libraries and museums; in some instances, the original writing in a palimpsest has been recovered by a chemical preparation.

37. *What is 'Bibliography?'*—Bibliography is a term applied to the proper cataloguing and describing of books; the person who undertakes such work is called a bibliographer.

38. *What is the 'Index Expurgatorius?'*—It is the name given to a catalogue of books which papal authority has prohibited being read by members of the Roman Catholic Church, on account of their supposed heretical or otherwise improper character. The business of the tribunal is conducted by a special body of officials at Rome.

39. *How did the term 'Stationer' originate?*—When books were multiplied by the invention of printing, they were sold by booksellers at stalls *stationed* at the gates of universities and other places; hence, booksellers became known as *stationarii*, or stationers, by which designation they were long chiefly known.

40. *What are the Vedas?*—They are the most ancient and most authoritative Hindu books on religious subjects. They are in Sanscrit.

41. *What are the Puranas?*—They are later Hindu writings containing the creeds and rites of the various Hindu sects of modern times.

42. *What is the Shaster?*—*Shaster* or *Shastra* means simply a book; but the term is especially applied to the *authoritative* religious and legal books of the Hindus.

43. *Who was Confucius?*—He was a Chinese sage and moralist, who was born about 550 B.C., and wrote several works inculcating justice, honesty, benevolence, and other virtues, which have been greatly esteemed. The peculiar interest attaching to Confucius lies in this, that his system of religion, or rather morality, is regarded as the most faithful expression of the Chinese mind.

44. *What is the Koran?*—It is the sacred book or bible of the Mohammedans, composed in Arabic by Mohammed; the word *Koran* is from the Arabic *karaa*, to read or teach.

45. *What was the Zendavesta?*—It was the sacred book or bible of the ancient Persians, so called from the *Zend* language, which formerly prevailed in Persia; it is ascribed in part to Zoroaster.

46. *What are the two great varieties of literature?*—Prose and poetry.

47. *What is Poetry?*—It is any production of the imagination expressed in language or loftily-conceived thoughts expressed in spoken or written words.

48. *Must poetry be in the form of verse?*—No; it often appears in the form of prose, as is exemplified in Job and some other books in the Old Testament, also in the poems of Ossian.

49. *What are the principal kinds of poetry?*—The Epic, the

Lyric, and the Dramatic; there are likewise Didactic and some other varieties of poetical composition.

50. *What is Epic poetry?*—Epic is from the Greek *epos*, a word, a discourse, or narrative; an epic poem is a narrative of events, which may be either real or fictitious, or partly both. The heroic epic, such as the *Iliad* and *Odyssey* of Homer, or the *Paradise Lost* of Milton, is considered the grandest species of poetical composition.

51. *What is Lyric poetry?*—Lyric is from the Greek *lyra*, a lyre; lyric poetry is so called from having been originally accompanied by the music of the lyre. It concerns itself with the more delicate emotions, and embraces songs of the affections and feelings.

52. *Mention some of the varieties of lyrics.*—Hymns or spiritual songs, anthems, love-songs, war-songs, elegies, and odes.

53. *What is an Ode?*—Ode is from the Greek, and signifies literally a song; but it is applied specially to songs or verses which consist of passionate addresses to persons and things.

54. *What is an Idyll?*—Idyll is from a Greek word signifying a little image, and is usually applied to any poem depicting simple scenes of pastoral or village life.

55. *Give an example of an idyll.*—The Book of Ruth is an idyll; and so likewise are Burns's *Cottar's Saturday Night*, Goldsmith's *Deserted Village*, and many of the poems of George Crabbe.

56. *What is Dramatic poetry?*—The word drama is from the Greek *draö*, I act, and by dramatic poetry is signified the poetical representation of human actions and conversations on the stage.

57. *What is said to have been the original form of the drama?*—The drama received its earliest development among the Greeks, and consisted originally of choral songs delivered by one or two persons.

58. *Who was Thespis?*—Thespis was a Greek who flourished 536 B.C., and is said to have introduced regular conversations into the choral songs at the festivals of Bacchus, thereby promoting the introduction of tragedy.

59. *What is Tragedy?*—The term tragedy is derived from the Greek *tragōdīa*, which is from *tragos*, a goat, and *ōdē*, a song. The ordinary explanation of the origin of this name is, that a goat was given as a prize to the singers of the dialogues which composed the representation. Tragedy

is applied to any drama of a grave kind, the opposite of comedy.

60. *What is Comedy?*—Comedy is derived from the Greek *kōmos*, a revel, or *kōmē*, a village, and signifies literally a reveller's song, or the village song; in its character comedy is sportive, witty, and amusing.

61. *What is an Opera?*—It is a musical drama, in which the dialogues are sung, much in the manner of the ancient choral tragedies of the Greeks; it is, however, a modern form of composition, taking its name from the Italian *opera*, a work.

62. *What is the libretto of an opera?*—It is the words of the piece, which are only a peg on which to hang the music; the term *libretto* is Italian for 'a little book.'

63. *What is Metre?*—It is a measured succession of syllables, forming verse; the term metre signifying measure. In the classical languages, metre depended upon the way in which long and short syllables were made to succeed each other; but English metre depends on the succession of a certain number of accented and unaccented syllables.

64. *What is Blank Verse?*—It is metre without rhymes.

65. *What is Rhyme?*—It is a correspondence of sounds in certain syllables, most commonly the terminating syllables in verses. Rhymes are often by mistake called poetry; there may be rhymes where there is no poetical fancy, but only a jingle of words.

66. *Is rhyme ancient?*—It has been known from the earliest times; but the systematic use of final rhymes, was first introduced in the Latin hymns of the middle ages.

67. *What are Alexandrines?*—They are rhyming verses, consisting each of twelve syllables or six measures; the term is supposed to be derived from an old French poem on Alexander the Great, belonging to the 12th or 13th century, in which this long measure was used.

68. *What is the Spenserian stanza?*—It is a group or series of metrical rhymes, each line consisting of ten syllables except the last, which has twelve, or is an Alexandrine; it is called Spenserian, from having been first employed in English by Spenser in his poem, the *Fairy Queen*.

69. *What were the Delphin classics?*—They were a series of editions, with notes, of the Greek and Latin classic authors, prepared by 39 of the best scholars in France, by order of Louis XIV., for the education of his son, the Dauphin—in Latin *Delphinus*. The books were described as '*In usum Delphini*,' or for the use of the Dauphin; hence the term 'Delphin classics.'

70. *What is meant by 'liberty of the press?'*—It is the liberty of printing books and newspapers without license or the control of a censor. This liberty in its fullest extent is now enjoyed in the United Kingdom—authors and publishers, however, being accountable at law for attacks on private character, or for incitements to public disorder.

71. *What is 'a censorship?'*—It is an authority asserted by the state to scrutinise the products of the press, and to restrain them from being issued if they seem objectionable or dangerous to the ruling power. A censorship, more or less strict, exists in nearly every continental country.

Greek and Roman Philosophy and Literature.

1. *What was the period most distinguished for philosophy and literature in Greece?*—It was a period extending from about 500 B.C. to 146 B.C.; but there were many distinguished men earlier and also later.

2. *Who were the 'Seven Wise Men of Greece?'*—These were seven persons noted for their sagacity as philosophers and statesmen at an early period of Greek history; they were Periander of Corinth, Pittacus, Thales, Solon, Bias, Chilon, and Cleobulus.

3. *What is meant by Philosophy?*—Any systematic inquiries into the nature of things, physical or mental; the term is from the Greek *phileo*, I love, and *sophia*, wisdom.

4. *What is Mental Philosophy?*—That branch of philosophy which treats of the mind; it is sometimes called Psychology—*psyche*, in Greek, for soul or mind.

5. *What is meant by Metaphysics?*—The term metaphysics is sometimes used as another name for mental philosophy; but in its more proper sense it denotes certain abstruse speculations concerning the nature of knowledge.

6. *What is Logic?*—It is the art of reasoning, and is so called from a Greek word signifying discourse.

7. *What is meant by Ethics?*—It is a word from the Greek, and is applied to the science which treats of the nature and grounds of moral obligation. This science is also called Moral Philosophy.

8. *Who was Homer?*—He was the earliest and greatest of the Greek poets, who lived probably about the 9th century B.C.; but the place of his birth is unknown. Homer's two great works are the *Iliad* and *Odyssey;* both are of a heroic character, and abound in lofty sentiment.

9. *Who was Hesiod?*—Next to Homer, he was the earliest of the Greek poets, and flourished in the 8th century B.C. Hesiod's poems are not like those of Homer, but portray peaceful pursuits and a simple style of life; they also illustrate the mythological notions of the time.

10. *Who was Sappho?*—She was a celebrated Greek poetess, born in the Isle of Lesbos about 600 B.C.; her poems were of the lyrical kind, highly finished in language, and abounding in tenderness of sentiment. It is this poetess to whom Lord Byron refers in his verses, the *Isles of Greece*—

'Where burning Sappho loved and sung.'

11. *Who was Æschylus?*—He was an eminent writer of tragedies, born 525 B.C., and is usually styled 'the father of tragedy.' Seven of his numerous tragedies are preserved, and are noted for grandeur of ideas and elegance of expression.

12. *Who was Pindar?*—He was a famed Greek poet, born about 520 B.C.; his poems are of a lofty, heroic nature, chiefly in praise of the victors at the Olympic, Pythian, and other Greek festivals, and were favourites with Alexander the Great.

13. *Who was Sophocles?*—He was a celebrated Greek dramatist, born 495 B.C., whose tragedies, more particularly his *Antigone* and *Œdipus*, are highly admired for their depth and tenderness of feeling, and their harmony of versification.

14. *Who was Euripides?*—He was a celebrated Greek dramatist, born 480 B.C., and, after Æschylus and Sophocles, with whom he was contemporary, ranks as the third great writer of Greek tragedy.

15. *Who was Æsop?*—He is said to have been a freed Greek slave, who lived in the middle of the 6th century B.C. He became famous for teaching morality by means of fables, in which the lower animals are introduced as actors. Besides this little is known regarding him. The fables ascribed to Æsop are well known in English and some other modern languages.

16. *Who was Pythagoras?*—He was a Greek philosopher, a native of Samos, where he was born about 570 B.C. Pythagoras has left no works; and it is therefore questionable

whether he is to be held responsible for every doctrine that goes under his name. His disciples probably modified or exaggerated these according to their own predilections. The two great doctrines associated with his name are, first, 'that number is the origin of all things,' and second, the belief in metempsychosis or the transmigration of souls.

17. *Who was Æsculapius?*—He was a physician rendered famous by Homer, of whom there are numerous mythological fables, and who is renowned as the father of the healing art. Æsculapius is always represented as a man with a long beard, holding a knotty staff, around which twines a serpent, and at his feet is placed a cock, and sometimes a dog, emblematic of watchfulness.

18. *Who was Hippocrates?*—He was an eminent Greek physician, belonging to a family that claimed to be descended from Æsculapius, and was born about 460 B. C. Hippocrates systematised the medical art, and left various writings, still valued for their sound views concerning the art of preserving health.

19. *Who was Aristophanes?*—He was a native of Athens, born 444 B. C., and renowned as a writer of comedies, which were generally of a satiric character ; his comedies are prized for their wealth of fancy and beauty of style. The choruses in particular often display the purest spirit of poetry.

20. *Who was Aristotle?*—He was a celebrated Greek philosopher, born 384 B. C., whose writings were of a most comprehensive nature, including logic, or a method of formal reasoning. Alexander the Great was educated under Aristotle.

21. *Who was the 'Stagyrite?'*—Aristotle has been called the Stagyrite from having been born at Stageira, a Greek colonial town ; his fame, however, rests on his teaching in the Lyceum near Athens.

22. *How did the term Lyceum originate?*—The school in the neighbourhood of Athens at which Aristotle taught received the name Lyceum, from being situated near the temple consecrated to *Apollo Lukeios* (Apollo the wolf-slayer). Institutions at which the Aristotelian philosophy was afterwards taught, were from this origin called lyceums, and the term lyceum is now often applied to any educational institute.

23. *What was the 'Peripatetic Philosophy?'*—It was the philosophy of Aristotle, which he usually taught while walking (*peripateo*, 'I walk about') in the shady groves of the Lyceum ; hence his followers were called *Peripatetics*.

24. *How long did the Aristotelian philosophy retain its*

influence?—It was embraced among other systems by the Romans, was taught under the auspices of the church in the middle ages, and kept its place in universities till displaced by modern and more correct teaching.

25. *What did the ancient philosophers teach as regards the structure of the universe?*—They taught that the earth is stationary in the centre of the heavens, and that the sun revolves around it—a theory which was maintained in the schools and by the world generally until the discoveries of Copernicus.

26. *What was the 'Primum Mobile?'*—In the ancient astronomy, usually called the Ptolemaic system, the primum mobile was an outer or tenth sphere, which was supposed to revolve round the earth in twenty-four hours, and to carry all the other spheres of the heavenly bodies along with it.

27. *Who was Socrates?*—He was a Greek philosopher, born 470 B.C., whose character and teaching were equally pure and noble. Alcibiades, Crito, Xenophon, Aristippus, Phædon, Plato, and other noted men were among his pupils.

28. *What is the 'Socratic method of reasoning?'*—It is, when arguing, to ask questions, by answering which an adversary unconsciously makes certain fatal admissions. Socrates resorted to this device, in order to force his pupils to think for themselves, and be on their guard against fallacies.

29. *What were the principal doctrines of Socrates?*—He taught that there is but one Divine Being, whose favour can only be propitiated by a blameless life; at the same time Socrates sacrificed and prayed at the heathen altars of his country.

30. *What was the fate of Socrates?*—He was accused of denying the ancient divinities of the state, and of perverting the religion of his pupils; on which charge he was condemned by the ruling faction to death, and died by drinking a bowl of poison, B.C. 399. Few of the ancients have merited such profound admiration as Socrates.

31. *Who was Theophrastus?*—He was a famous Greek philosopher and naturalist, born 371 B.C. He succeeded Aristotle as a teacher at Athens, and composed a number of works concerning plants, stones, and other natural objects; but his fame rests chiefly on his work, entitled *Ethical Characters*, which shews an intimate knowledge of mankind.

32. *Who were the Sophists?*—They were a class of reasoners contemporary with Socrates and Pericles, who took their designation from *sophos*, wise; but they brought reasoning

into contempt by endeavouring to cast uncertainty over the most obvious truths. Hence, specious arguments are called *sophistry*.

33. *Who was Plato?*—He was an eminent Greek philosopher, born about 429 B.C. His original name was Aristocles, and he was called Plato, from *platus*, broad, on account of the breadth of his chest and forehead. Instructed by Socrates, Plato adopted lofty views of nature and of the aspirations of the human soul, which he taught in the groves of Academeia.

34. *What was the Academeia?*—It was a spot where Plato taught, in the neighbourhood of Athens, which was said to have been presented to the citizens for gymnastic exercises by the mythic hero Academus, and hence its name. Hence the English *Academy*, now applied to any school of a superior kind.

35. *What is meant by 'Platonic affection?'*—It is a phrase derived from a doctrine of Plato, to the effect that happiness consists in a 'union of kindred souls in the love and zealous search for truth.'

36. *Who were the Cynics?*—They were a sect of Greek philosophers noted for the morose and snarling character of their doctrines; whence, perhaps, their name, which means doggish or dog-like; though Cynics is more probably only an adapted abbreviation from the name of the gymnasium where Antisthenes taught, which was called *Cynosarges;* the sect was established by Antisthenes, a pupil of Socrates, who was born B.C. 426.

37. *Who was Diogenes?*—He was a Greek philosopher at Athens, of the sect of the Cynics; he inveighed against every species of luxury, and practised the most rigid temperance, along with a sacrifice of every personal comfort. It is said that at night he slept in a tub, but this statement rests on no good authority. Diogenes, who must be considered a philosophical fanatic, died 324 B.C.

38. *Who was Zeno?*—He was a Greek philosopher, born about 366 B.C.; after finishing his studies at Athens under the Cynics, he founded a sect of his own, called the Stoics.

39. *Why were the followers of Zeno called Stoics?*—From the spacious painted porch—*stoa* being Greek for porch—in which their master taught.

40. *What was the nature of the Stoical philosophy?*—It was less severe than that of the Cynics, which it ultimately absorbed; yet it inculcated a certain callousness of feeling, and even sanctioned the principle of self-destruction.

41. *Who was Democritus?*—He was a Greek philosopher, born about 470 or 460 B.C., who taught the doctrine of the eternal existence of atoms.

42. *What was the Eleatic School?*—It was a philosophical sect which took its name from *Elea*, a town in Italy. The Eleatic philosophy was established by Xenophanes, and expounded by Parmenides and Zeno. Its most flourishing period was between 540 and 460 B.C.

43. *Who were the Epicureans?*—They were followers of Epicurus, a Greek philosopher, born 341 B.C., who taught that pleasure apart from vicious or sensual indulgences is the chief good. From a misapprehension of his doctrines, those who take inordinate delight in eating and drinking have been called Epicureans.

44. *Who was Herodotus?*—He was the earliest Greek historian, born 484 B.C., and for this reason he has been called the 'Father of History.' After visiting Egypt, Palestine, Assyria, and other countries, and when advanced in life, he wrote his famous work. The geographic accounts of Herodotus have been generally verified by recent travellers, and are prized for their accuracy.

45. *Who was Thucydides?*—He was the most philosophical of all ancient historians, a contemporary of Herodotus, and born in 471 B.C.; his great work is a history of the Peloponnesian war, noted for accuracy of research, profundity of conception, and dignity of style.

46. *Who was Xenophon?*—He was a celebrated Greek historian and general, born about 450 B.C., and was a pupil of Socrates, of whom he has left *Memorabilia*. Xenophon commanded the Greek forces in their retreat from Persia, of which event he gives an account in his *Anabasis*, his best known work. On account of the style in which his works are written, they are much used as school-books for the study of Greek.

47. *Who was Theocritus?*—He was a Greek poet, who flourished about 280 B.C.; his poetry is written in the Doric dialect, and is rich in simple pastoral subjects.

48. *Who was Euclid?*—He was an eminent mathematician, born at Alexandria about 300 A.D., and belonged to what is termed the Alexandrian school of learning. Euclid's great work was his *Elements of Geometry*, which is still used as a text-book.

49. *Who was Archimedes?*—He was a celebrated Greek mathematician and writer on mechanics, born about 287 B.C.;

his reputation rests chiefly on his discoveries in mechanics and hydrostatics.

50. *Who was Plotinus?*—He was a Greek philosopher at Alexandria, born 205 A.D., who is famed as the most original and speculative thinker among the Neo-Platonists.

51. *What was Neo-Platonism?*—The word *neo* is from the Greek *neos*, new, and by Neo-Platonism is meant certain new doctrines founded on those of Plato; these new doctrines gradually assumed a religious form, which proved antagonistic to Christianity.

52. *Who was Porphyrius?*—He was the most distinguished pupil of Plotinus, and was born 233 A.D. In his teaching, Neo-Platonism took a distinctively anti-Christian tendency.

53. *Who was Polybius?*—He was an eminent Greek historian, born about 204 B.C., whose work embraces the history of Rome from its capture by the Gauls down to the subjugation of Macedonia. The history of Polybius occupies a very high rank.

54. *Who was Aristarchus?*—He was a Greek grammarian and critic who lived at Alexandria about 150 B.C., and was noted for his labours in connection with the text of Homer. His principles of criticism were exceedingly strict; hence, a severe but just critic is sometimes called a 'modern Aristarchus.'

55. *Who was Dionysius of Halicarnassus?*—He was a learned Greek historian, critic, and rhetorician, born about 50 B.C. His most valuable work is his *History of Rome.*

56. *Who was Diodorus Siculus?*—He was one of the later Greek historians who flourished about the beginning of the Christian era; his work, called the *Bibliotheca* or Library, purports to be a history of the world from the Creation till the Gallic wars of Julius Cæsar: but what survives of it is of little practical value.

57. *Mention two later Greek geographers.*—Strabo, born about 66 B.C., and Pausanias, who lived in the 2d century of our era; from their writings, in addition to those of Herodotus and Ptolemy of Alexandria, who flourished about 139 A.D., we derive our chief information respecting ancient countries.

58. *Who was Plutarch?*—He was an accomplished Greek writer, who lived some time in Rome, about 80 A.D., and there taught philosophy. Plutarch's reputation rests on his well-known *Lives* of distinguished Greek and Roman personages; no one in ancient or modern times has excelled him as a biographer.

59. *Who was Lucian?*—He was a Greek writer celebrated for his ingenuity and wit; his best known works are his *Dialogues of the Gods* and *Dialogues of the Dead*, in which he satirises the mythology and philosophical sects of the Greeks. Lucian died about the end of the 2d century.

60. *Who was Longinus?*—He was an eminent Greek philosopher and rhetorician who followed the doctrines of Plato; he was employed as a tutor by Zenobia, the Greek queen of Palmyra, and on a charge of treason was beheaded by the Roman emperor Aurelian, 273 A.D.

61. *Were the Romans as distinguished for philosophy and literature as the Greeks?*—No; the Romans adopted the Greek philosophy, on which they made no distinct advance, and their imaginative literature had not the range or brilliancy of their Greek predecessors; they possessed no poet like Homer, Pindar, or Sappho; and no dramatist like Æschylus, Sophocles, or Euripides. In History and Jurisprudence, they rank higher. Livy surpasses Herodotus in style and pictorial effect, and Tacitus may vie with Thucydides.

62. *What was the most brilliant period of Roman literature?*—A space of little more than ninety years, from the dictatorship of Sulla, 81 B.C., to the death of Augustus, 14 A.D.

63. The following is a summary of Romans (including one Greek, Epictetus) distinguished for literature, learning, and general accomplishments.

Plautus, the greatest of all the Roman comic poets and dramatists, was born about 254 B.C. He was for some time a journeyman-baker. His works possess a strong, racy, popular humour.

Terence, born about 195 B.C., a comic dramatist, contemporary with Plautus, of inferior genius, but more refined; his comedies are esteemed for their purity of language, and also their prudential maxims.

Cicero, the greatest orator of Rome, and illustrious as a statesman and man of letters, born 106 B.C.; he has left numerous works on philosophy and rhetoric, one of the best known being *Tusculanæ Disputationes* (Tusculan Disputations).

Varro, a distinguished writer and friend of Cicero. He was the most learned and the most voluminous of all the Roman authors. He says himself that he wrote 490 books; of which only two have survived—one on agricultural matters, and another on the Latin tongue, the latter of which is very valuable.

Roscius, a very celebrated comic actor at Rome, 68 B.C.,

who realised a large fortune by his profession, which he carefully studied.

Lucretius, born about 95 B.C., wrote a philosophic poem on Nature, which is regarded as the finest of didactic poems.

Sallust (Sallustius), born 86 B.C., noted for his history of Cataline's conspiracy, the wars of the Romans against Jugurtha, and some other historical writings, which are composed in a picturesque and vigorous style. Sallust was very wealthy, and lived in a splendid villa at Rome. He died 34 B.C.

Seneca, a native of Spain, but a Roman citizen, famed for his works on rhetoric and ethics; in Rome he acted as tutor to Nero; on a false charge of conspiracy he was condemned, and bled himself to death by opening his veins, 65 A.D. Seneca followed the Stoic philosophy, and his works are for the most part ethical treatises, full of practical thought, expressed in a clear, forcible, and lively manner.

Livy (Livius), the most illustrious of the Roman historians, born 59 B.C. His great work was a history of Rome, which is considered a master-piece of Latin composition; it consisted of 142 books, of which, to the regret of scholars, all are lost but 35.

Julius Cæsar, renowned as a general, statesman, and historian, was assassinated 44 B.C. Cæsar's great works are his Commentaries on the Gallic and Civil Wars, which are written from personal observation, and are noted for clearness and purity of language, and accuracy of narration. The Commentaries are a favourite Latin text-book in schools.

Ovid (Ovidius), famed for various poetical productions, was born, 43 B.C. and flourished in the reign of Augustus, by whom, for some impropriety, he was banished to Tomi, near the mouth of the Danube. His best known work is his Metamorphoses, which, in a fanciful way, gives an account of all the transformations recorded in legend, from the Creation down to the time of Julius Cæsar, the change of whom into a star forms the last of the series.

Propertius and Tibullus were two elegiac poets of Rome, contemporary with Ovid; the writings of both are admired, but those of Tibullus are considered to excel in tenderness of sentiment.

Catullus (Valerius Catullus), a native of Verona, in the north of Italy, where he was born 87 B.C. He is probably the most original, and certainly the most exquisitely impassioned of all the Latin lyrists. His finest poem is entitled *Atys*.

Horace (properly, Quintus Horatius Flaccus), a native

of the south of Italy, was born 65 B.C., and became a great favourite as a poet at Rome, in the early part of the reign of Augustus. He excelled as a lyrist; and his pieces, lively, and often satiric, are exquisitely finished. No Roman writer is so universally popular as Horace.

Virgil (properly, Publius Virgilius Maro), distinguished for his epic, didactic, and pastoral poetry; he is sometimes styled the bard of Mantua, from having been born in a village near that city, 70 B.C. Virgil was a contemporary of Horace, and died 19 B.C.: his works are the *Æneid*, *Georgics*, and *Eclogues*. The *Æneid*, an epic poem on the model of Homer's *Odyssey*, is not marked by any striking originality, but contains many mildly beautiful passages, and more descriptions of scenery than any other ancient poem. It is deservedly in repute as a text-book, from the finish of its language and versification.

Vitruvius, who flourished in the time of Augustus, is noted for his writings on architecture, and to his taste is partly imputable the Roman adaptation of Greek art.

Cornelius Nepos, a historian of the 1st century B.C., who wrote lives of distinguished warriors and statesmen; his work is used as a text-book in schools.

Phædrus, originally a slave, who for a time was in the service of Augustus; his fame rests on his fables in verse, which are much used as a school-book.

Lucan, a poet, born about 38 A.D., nephew of Seneca; his only extant work is the poem entitled *Pharsalia*, which narrates the contests of Cæsar and Pompey. Having incurred the enmity of Nero, he was condemned to death, and, like his celebrated uncle, preferred to die by having his veins opened; he thus perished in his 27th year.

Columella, a learned writer on agriculture, whose chief work on that subject is still prized for its sagacity and practical character; he flourished 50 A.D.

Epictetus (a Greek) flourished in the first part of the 2d century B.C.; he wrote a compendium of the Stoic philosophy, and his sayings were collected by one of his pupils. He rose from the condition of a slave to places of honour, and was highly esteemed for the purity of his morals.

Pliny (Plinius); there were two distinguished Romans of this name, uncle and nephew, usually known as Pliny the Elder, and Pliny the Younger.

Pliny the Elder, a wealthy patrician, was born 23 A.D., and served for some time with distinction in the army. He was noted for his temperance, industry, and economic use of time, by which means he, in the course of a busy

professional career, digested and wrote a variety of works, of which only one has survived, the *Historia Naturalis* (Natural History)—a most comprehensive work, for it embraces the material world, man, animals, plants, medicines, and other subjects. Pliny was killed by the eruption of Vesuvius, 79 A.D.

Pliny the Younger, born 61 A.D., noted for his Epistles, of which there are ten books, in which he gives an account of the early Christians that is greatly to their credit.

Quintilian, author of a *Systematic Treatise on Rhetoric*, in 12 books, flourished about 90 A.D., and is reckoned as the greatest authority on style among the ancients.

Tacitus, the greatest of the Roman historians, was born probably about 60 A.D. He wrote a history of Rome during the earlier years of the empire, also a work on Germany, and a life of Agricola. The writings of Tacitus unite philosophical observation with a picturesque narration of facts.

Celsus, a celebrated Latin physician and writer on medical subjects, who flourished, it is supposed, in the reign of Augustus, and has been styled the 'Roman Hippocrates.' His great work is *De Medicinâ*, a Treatise on Medicine and Surgery.

Galen, a celebrated physician, born 130 A.D., practised medicine for some time at Rome, and served as a physician to the Roman army. Galen was an Asiatic Greek by birth. He died about 201 A.D., and left numerous treatises on medicine, pharmacy, and surgery, also on philosophical subjects.

Macrobius, a writer belonging to the 4th or 5th century, author, among other things, of a work entitled *Saturnalia*, which is valued for its illustrations of ancient manners and customs.

64. *Who were the Mimi of the Romans?*—The *mimi* were buffoons, who appeared at convivial meetings to entertain the guests by their farcical humour. The word *mimicry* is derived from them.

65. *Who were the Pantomimi of the Romans?*—They were tragic actors who represented characters and emotions by gestures and posturing alone. The modern term pantomime is derived from the Roman *Pantomimi.*

66. *What is the origin of Harlequin?*—The character of Harlequin, with his parti-coloured dress, is derived from that of a Roman *mime.* Some think that the character is a kind of burlesque of Mercury with his caduceus or short sword, to render himself invisible. The modern clown in a harlequinade represents Momus, the buffoon of the Greek mythology.

67. *What did the Greeks consider the Seven Wonders of the*

World?—1. The Pyramids of Egypt; 2. The Walls and Hanging-gardens of Babylon; 3. The Pharos at Alexandria; 4. The Temple of Diana at Ephesus; 5. The Statue of the Olympian Jupiter sculptured by Phidias, and composed of ivory and gold; 6. The splendid sepulchre erected by Queen Artemisia to her husband Mausolus, 353 B. C.—hence the English term mausoleum; and, 7. The Colossus of Rhodes.

Medieval Learning and Arts.

1. *How long did Latin continue to be the language of literature after the dissolution of the Roman empire?*—It continued to be employed by the fathers of the church, scholastics, and others, until about the middle of the 14th century, when it began to be superseded by modern languages.

2. *What is Patristic Latin?*—It is the Latin as written by fathers (*patres*) of the church, and is considered to be less pure and elegant than that of the classical Roman authors.

3. *Who were the Fathers of the Church?*—They were a long series of ecclesiastical teachers, who lived from the times of the apostles until about the 7th century, and generally left treatises defining the early views and doctrines of the church.

4. *Mention the names of some of the fathers?*—The list, including Greek and Latin fathers, is very numerous; a few of their names, indiscriminately, are as follows—Clement of Alexandria, Lactantius, Origen, Eusebius, Athanasius, Chrysostom, Tertullian, Augustine, Ambrose, and Jerome.

5. *Who was Arius?*—He was a religious teacher in the early part of the 4th century, who, while professing Christianity, maintained certain doctrines which were declared heretical by the famous Council of Nice, held 325 A. D. Arianism, as it is called from him, is opposed to the common doctrine of the Trinity, and holds that the Son is inferior to the Father.

6. *Who were the Scholastics?*—The name scholastics, or schoolmen, is ordinarily applied to certain famed teachers of philosophy and theology from the 9th to the 14th century—in short, to the men who taught the higher branches of education to the clergy and others, either in the monastic schools or in the later universities.

7. *Where did the scholastics ply their vocation?*—Generally in schools attached to monasteries, out of which there was little security for students in the middle ages. Most of the scholastics were monks.

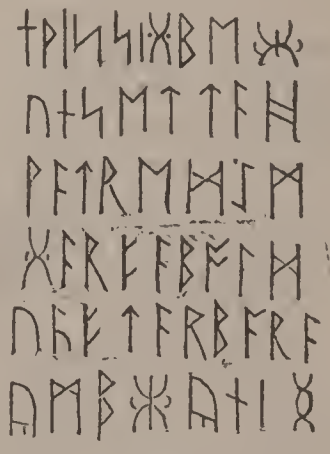
8. *Mention the names of some eminent scholastics?*—Albertus Magnus (died 1280), Alexander of Hales, Thomas Aquinas, and Duns Scotus; this last flourished in the 14th century, and was particularly famous.

9. *Who was Bede?*—The 'Venerable Bede,' as he is usually called from his learning and piety, was born about 673, and became a monk at Jarrow, Northumberland; here he composed several learned works, particularly an ecclesiastical history of England down to 731, which constitutes an invaluable body of facts concerning the early condition of the country; it was written in Latin, but has been translated into English.

10. *What were the Sagas?*—The sagas were heroic poems and histories of the northern or Scandinavian people, about the 12th century; there were several celebrated sagas.

11. *What were the Eddas?*—Edda is the name given to two collections of Scandinavian myths or fables, the older being in verse, and executed, probably in the 12th century, by Sæmund the Wise; the younger in prose, by Snorri Sturleson, in the 13th century.

12. *What is meant by Runes?*—Runes is the name given to a kind of letters or alphabet used in early times by the Scandinavian and German peoples. They were much employed as symbols in divination and other magical practices. Old monuments covered with Runic symbols still exist in many parts of the British Islands.



Runes.

13. *Who was Thomas à Kempis?*—He was a native of Kempen, in Germany, where he was born in 1379; he became a monk in an Augustinian convent near Zwoll, and wrote several works of a religious nature; one of these, styled the *Imitation of Christ*, justly admired for its piety and simplicity, has been translated into many languages, and perhaps been more frequently printed than any other book, except the Bible.

14. *What was the period in which Arabic learning and literature flourished?*—It extended from the 8th to the 14th century,

when the learning and arts of the Arabians were extinguished by the barbarous tribes who migrated from Central Asia.

15. *Who was Abulfeda?*—He was a Syrian ruler, distinguished as a writer of several works in Arabic, on geography, history, and other subjects; he died in 1331.

16. *Who was Hafiz?*—He was an eminent Persian poet, who died about 1388. His collection of works is entitled the *Divân*, and consists chiefly of odes, or, as they are called in Persian, *ghazels*.

17. *What was the origin of the Arabian Nights' Entertainments?*—The work under that title is a collection of stories abounding in wild oriental fictions, which originated partly in India, Persia, and Arabia, and were perfected in Persia shortly after the reign of the Caliph Haroun al Raschid.

18. *When did Haroun al Raschid live?*—He lived in the 8th century, and was a contemporary of Charlemagne.

19. *When did the Arabian Nights' Entertainments become known in Europe?*—They were first made known under a French translation by M. Galland, 1704; but the best translation is the English one executed by Dr Edward Lane and published in 1839.

20. *What are Improvisatori?*—Improvisatori is the Italian name applied to persons who make extempore verses sometimes in public places of resort for general amusement; the term signifies to invent without premeditation.

21. *Is the practice of improvising ancient?*—Yes; it greatly prevailed during the middle ages, and served the purposes of literature where books were little known. The practice is still pursued in several Eastern countries.

22. *What was Alchemy?*—A supposed hidden or secret art of transmuting the baser metals into gold, by means of an unknown substance called the *Philosopher's Stone;* also the art of making an elixir to prolong human life, called the *Elixir Vitæ*.

23. *Where did alchemy originate?*—It originated in ancient times in Egypt, and after being practised among the Romans, it formed a pursuit of various learned enthusiasts in the middle ages. The term alchemy is Arabic, and is supposed to be from *Cham*, the Scripture name of Egypt.

24. *How did the science of Chemistry originate?*—It originated in the vain pursuits of the alchemists, who, while engaged in their secret experiments with retorts and crucibles, made many real and valuable chemical discoveries, and founded the science of chemistry.

25. *Who was Gebir?*—He was an Arabian alchemist, who lived in the 8th century, and wrote the first book on chemistry.

26. *What were Occult Arts?*—They were hidden or secret arts; the term occult, from the Latin, signifies concealed. The ancients practised various arts of this kind, such as divination or fortune-telling, necromancy, alchemy, and astrology.

27. *Explain the nature of Astrology.*—It was the delusive art of divining the fortune of individuals from the position of the heavenly bodies at the time of their birth. The term astrology is from the Greek, and signifies a knowledge of the stars.

28. *What nations were believed to be proficients in astrology?*—The Egyptians, Chaldæans, Hindus, Chinese, and latterly the Arabians, who pursued it with great ardour from the 7th to the 13th century.

29. *What was the great discovery that shook confidence in astrology?*—The discovery by Copernicus of the true system of planetary motions (1540), after which astrology was pursued only by weak-minded persons and impostors. The latest astrologer of any note in England was William Lilly, in the reign of Charles I.

30. *Who was Nostradamus?*—He was a celebrated French astrologer of the 16th century; he received encouragement from the court of France, and died 1566. Nostradamus wrote an almanac, which served as a model for subsequent ones.

31. *Who was Paracelsus?*—He was a clever and audacious Swiss, born about 1493, who adopted this name, and became notorious for his real or pretended cures of diseases, in which he repudiated Galen and all the old medical authorities. Paracelsus partook of the nature and manner of a charlatan, but his novel views helped considerably to break up antiquated notions, and to improve the practice of medicine. He was killed, 1541.

32. *Who were the Rosicrucians?*—They were members of a secret society, alleged to have been founded by Christian Rosenkreutz, a German, in the 14th century, who was said to have lived in India and Egypt, and there learned ancient mystic arts. The Rosicrucians had various fraternities at the beginning of the 17th century, but they ultimately died out.

33. *What peculiar fancies regarding the unseen world prevailed in the middle ages?*—There was a belief in 'Spirits of the Elements'—the spirits of fire being called *Salamanders;* those

of the water, *Undines;* of the air, *Sylphs;* and of the earth, *Gnomes;* all which ridiculous and superstitious fancies have been made available by poets.

34. *What is Superstition?*—Absurd opinions concerning the order of Nature and attributes of God; such as a belief in magic, witchcraft, fetishes, fairies, and ghosts.

35. *What is a fetish?*—A fetish is a thing supposed to be invested with marvellous powers, such as a tree, carved piece of wood, or any bundle of trash.

36. *Where has a belief in fetishes prevailed?*—Among heathen nations in ancient and modern times; but it now more particularly prevails in certain negro nations of Africa.

37. *What are fairies or elves?*—They were imagined to be diminutive, bright, lively, aëreal beings, usually of a kindly disposition, though sometimes a little malignant. A belief in beings of this kind prevailed from the earliest times among the Teutonic and Celtic nations of Europe.

38. *What style of Architecture arose in the middle ages?*—The pointed or Gothic style, as developed in the building of abbeys, churches, and other ecclesiastical structures.

39. *What were the Masonic Guilds of the middle ages?*—They were fraternities of practical architects and masons, who were employed to rear those grand ecclesiastical structures which still survive to attest the piety of the founders, and the skill of the artisans who constructed them.

40. *Were the masonic fraternities stationary?*—No; they moved about from country to country, fostered by the church, and protected by the rulers who required their services. These medieval fraternities are typified in the lodges of 'free-masons,' in modern times.

41. *What was the state of the drama in the middle ages?*—There was no drama, properly so called; the ancient Greek and Roman drama had sunk and disappeared; and the only theatrical performances consisted of 'mysteries and miracle plays,' and 'mummeries.'

42. *What were Mysteries and Miracle Plays?*—They were a species of drama founded on the historical parts of the Old and New Testaments, and the lives of the saints, performed first in churches and afterwards on platforms in the streets. Their original design was to instruct the people, but they latterly degenerated into scenes of coarse and irreverent buffoonery.

43. *What were the Mummeries of the middle ages?*—Mummeries were sports in masks; a mummer is one whose face is masked or concealed—hence the familiar word *mum*, to

conceal or be secret. The term *mummery* is believed to be originally from *Momus*, the god of mockery of the Greek mythology.

44. *What were the Romances of the middle ages?*—They were stories concerning saints, knights, giants, sorcerers, beautiful but distressed damsels, &c.; they originated chiefly in the ages of chivalry—11th to the 13th century.

45. *Explain how these stories were called 'romances.'*—They were so called from being narrated in modern dialects of the Roman (Latin) language, particularly French and Spanish. The modern word 'romance' is derived from these old medieval romances.

46. *Mention some of the more noted medieval romances.*—The story of Amadis of Gaul, and the story of Arthur and his Knights of the Round Table, are two of the most famous. Certain stories concerning a set of legendary heroes, called the 'Seven Champions of Christendom,' also belonged to this class of old and popular romances.

47. *Who were the saints of the middle ages?*—They were persons distinguished for an ardent spirit of devotion, as well as for their labours as Christian missionaries; for example, St Augustine, St Basil, St Benedict, St Anthony the Great, St Martin of Tours, St Francis of Assisi, and St Anthony of Padua. Several were renowned as thaumaturgists, and others as martyrs.

48. *What is a thaumaturgist?*—A thaumaturgist is one who is alleged to work wonders or miracles; the term is from the Greek *thauma*, wonder, and *ergon*, a work. The lives of the thaumaturgical saints were favourite books in the middle ages.

49. *What were patron saints?*—In the middle ages, every country and city had its patron or tutelary saint, who was supposed to act as its protector. For example, England had St George; Scotland, St Andrew; Ireland, St Patrick; Wales, St David; France, St Denis; Paris, St Geneviève; Naples, St Januarius; Edinburgh, St Giles; and so on.

50. *What were Saints' Days?*—They were days on which each particular saint was specially honoured. Thus, St George's day was 23d April; St Andrew's day, 30th November; St Patrick's day, 17th March; and St David's day, 1st March.

51. *What were the fabulous animals of the middle ages?*—They were monstrous dragons, which devoured flocks and herds; unicorns, with a single pointed horn in the forehead;

and salamanders, which lived in the fire. Legendary stories and ballads about dragons are common in every European country.

52. *What is the story of St George and the Dragon?*—It is a medieval romance, detailing the exploit of St George, a gallant Christian hero, who slew a monstrous dragon with his sword, after the animal had broken the lance with which he first attacked it.

St George and the Dragon.

53. *How has this legend been commemorated?*—By the figure of St George, as patron saint of England, being used in the insignia of the Order of the Garter, and being also placed on coins.

54. *What was the war-cry of the English in the middle ages?*—It was 'St George for Merry England'—a cry significant of the general character of the people, and their good-humoured sports and pastimes.

55. *What is the 'Order of the Garter?'*—It is an English order of knighthood, instituted by Edward III., on St George's Day, 1344, and is the highest honour of the kind.

56. *What is the story of its origin?*—It is related that the Countess of Salisbury, in dancing with Edward III., happened to lose her garter, whereupon the king picked it up, and tied it round his own leg; but that this act might not be misinterpreted, he restored the garter to the countess, exclaiming: '*Honi soit qui mal y pense*' (Shame to him who thinks evil), which exclamation remains the motto of the order, and is seen in the royal arms.

57. *What was the Renaissance?*—The term 'Renaissance' is applied to the revival of literature and arts in France in the early part of the 16th century—to which revival Francis I. and his accomplished sister, Margaret of Valois, materially contributed.

Continental Literature.

Italy.

1. *When does Italian literature commence?*—It begins as early as the 13th century, or previous to the general revival of learning; the following is a summary of the principal Italian writers, and other learned men of note—

Dante, an eminent poet born at Florence, 1265; his great work is the *Divina Commedia*, an epic poem consisting of three parts, L'Inferno, Il Purgatorio, and Il Paradiso; the poem is of the highest order, and ranks Dante with Homer and Milton.—Died 1321.

Petrarch, an eminent lyrical poet; his best poems are sonnets to a lady, named Laura, for whom he nourished a sentimental affection. Petrarch lived for a time at Vaucluse, near Avignon, whence his fame spread over Europe.—Died 1374.

Boccaccio, a celebrated novelist; he is best known for his *Decameron*, a series of little stories, from which later novelists and dramatists have largely borrowed.—Died 1375.

Louis Cornaro, a Venetian nobleman, renowned for his example of temperance, which he describes in his work, *Discorsi della Vita Sobria* (Essay on Temperate Living).—Died at nearly 100 years of age, 1566.

Macchiavelli, a famed statesman and writer on political subjects.[1] His most celebrated treatise is *Del Principe*, or how princes should govern their states. The principles inculcated by the author in this work are so bad, that it has been a question ever since, whether he wrote in earnest or in covert satire.—Died 1527.

Ariosto, celebrated for his poem, *Orlando Furioso*, which he wrote as a continuation of a previous romantic epic, *Orlando Innamorato*, by Boiardo. Ariosto's poetry exhibits a great richness of invention, with a highly-finished style.—Died 1533.

Guicciardini, famed as a historian and statesman; his great work is his History of Italy; he has been styled the Italian Polybius.—Died 1540.

Torquato Tasso, celebrated for his epic poem, *Gerusalemme*

[1] See *Historical Questions*, p. 180.

Liberata (Jerusalem Delivered), and also for his lyrical pieces, which are remarkable for their pathos and musical sweetness of versification.—Died 1595.

Guarini, famed for his elegant pastoral drama, *Il Pastor Fido* (The Faithful Shepherd). Guarini was one of several Italian writers who revived the regular drama, after its long depression during the middle ages.—Died 1612.

Tassoni, celebrated as the writer of a comic epic, *La Secchia Rapita* (Rape of the Bucket), satirising the petty wars of the Italian cities; but he wrote a number of other works.—Died 1635.

Galileo—properly Galileo Galilei, celebrated for his discoveries in physical science, confirmatory of the Copernican system; his noted work on this subject, a Dialogue concerning the two Ruling Systems of the World, subjected him to imprisonment by the Inquisition, 1633. Galileo occupies a high position in the annals of science.—Died 1642.

Torricelli, a philosopher, and follower of Galileo, who first ascertained the pressure of the air, and invented the barometer. —Died 1647.

Metastasio, author of numerous dramas and musical cantatas; his original name was Trapassi, of which Metastasio is a Greek translation.—Died 1782.

Galvani, a celebrated physiologist, discoverer of that species of electrical action, named from him *Galvanism*.—Died 1798.

Alfieri, a poet and writer of tragedies, who acquired some notoriety by marrying the Countess of Albany, widow of Prince Charles Edward Stuart.—Died 1803.

Spain and Portugal.

2. *What is 'The Cid?'*—The *Cid* is the title of an extremely old Spanish poem or ballad, having for its illustrious hero Don Rodrigo Ruy Diaz, who by the Moors was called *Es-Sîd* (lord or prince), which designation became corrupted into *Cid*. The ballad refers to the Cid's encounters with the Moors of Spain in the 8th century, and was written about 1150.

3. *Who was Cervantes?*—Miguel de Cervantes Saavedra was born about 1547, and died 1616. He suffered many misfortunes, and for the most part lived poor and friendless; yet he was the greatest writer that Spain ever produced. His principal work was *Don Quixote*, a satiric and amusing romance, the first part of which was published 1605.

4. *Who was Lope de Vega?*—He was an extraordinarily prolific Spanish dramatist, a contemporary of Cervantes and

of Shakspeare ; his dramas are heroic or historical comedies. —Died 1635. He was succeeded by Calderon, whose dramas possess a high polish, and are full of brilliant fancy.

5. *Who was Quevedo?*—Quevedo was a Spanish poet and novelist, noted for his humorous and satirical writings ; his most famed production was his *Visions*, which consist of revelations of the future world, depicting the end of vanity and punishment of crime.—Died 1645.

6. *Who was Camoens?*—Camoens was a Portuguese poet, and the only writer of his country who has obtained much celebrity abroad ; his fame rests on the epic poem, *Os Lusiadas*, or the Lusitanians—the ancient name of that part of the Peninsula now called Portugal having been Lusitania.—Died 1579.

France.

7. *When did French literature commence?*—It commenced with the songs of the troubadours, the romances of chivalry, and the fabliaux—all current in the 12th and 13th centuries.

8. *What were fabliaux?*—They were short metrical narratives on passing events or familiar subjects, generally satiric and humorous ; they were called *fabliaux*—that is, things told, stories, or narratives (from *fabulari*, to speak or tell), and their narrator was known as a *fableor*.

9. The following is a summary of noted French writers and men distinguished for learning previous to the reign of Louis XIV.—

Robert Sorbon, an eminent theologian in the reign of St Louis, who, about 1250, founded a college of education in Paris, which became celebrated under the name of the *Sorbonne*, and existed until overthrown by the revolution. The buildings have been restored to the service of public instruction, and lectures in theology and some other branches are still given there in connection with the Academy of Paris.

Froissart, a lively and observant writer, who flourished in the 14th century, and was a favourite at various courts in Europe. His fame rests on his *Chronicles*, an amusing account of the events of his time, prized for its illustrations of courtly usages.—Died 1410.

Philippe de Comines, a statesman, first in the service of Charles the Bold of Burgundy, and afterwards a confidential minister of Louis XI. ; he wrote valuable and interesting *Memoirs*.—Died 1509.

Rabelais, a satirical and humorous writer, whose fame

rests on a romance, the heroes of which are *Gargantua* and *Pantagruel;* the work is full of exceedingly coarse satire and buffoonery.—Died 1533.

John Calvin (French, Jean Cauvin), a theologian and reformer, who wrote in Latin and in French; his chief works are his *Institutes of the Christian Religion,* and his *Commentaries on the Scriptures.*[1]—Died 1564.

Ronsard, an eminent lyrical poet, whose verses were favourites with Mary Queen of Scots.—Died 1585.

Brantome, a writer of memoirs descriptive of the manners of his time—Charles IX. to Louis XIII. He died 1614.

Montaigne, distinguished as a writer of philosophical and moral *Essays,* which have been translated into several languages, and are of a sceptical character.—Died 1592.

Francis de Sales was famed for his works of a devotional character, the principal of which is his Introduction to a Religious Life; and also for his services in recovering large numbers to the Church of Rome after they had become members of the Reformed communions.—Died 1622.

Sully, a statesman and writer of memoirs illustrative of the reign of Henry IV.[2]—Died 1641.

10. The following were the distinguished writers in the long reign of Louis XIV., 1643—1715, ordinarily called the Augustan age of French literature—

Descartes, an eminent philosophical thinker and writer, who opened the way for Locke, Newton, and Leibnitz. The leading peculiarity of his metaphysical system was the attempt to deduce all moral and religious truth from self-consciousness.—Died 1650.

Blaise Pascal, a writer of works of a pious and religious nature; the two best known are his *Pensées* (Thoughts), and *Lettres Provinciales* (Provincial Letters), which are considered among the finest specimens of French literature.[3]—Died 1662.

Mademoiselle de Scudery, a writer of romances, the principal of which are *Le Grand Cyrus,* and *Clelie,* each in 10 vols. They were once very popular, but are now almost forgotten. Died in 1701, aged 94.

Madame de Sévigné, celebrated for her epistolary talents; her letters, written mostly to her daughter, are esteemed models of simplicity, liveliness, and elegance of expression; they consist of several volumes. She held a high place in the literary circles of Paris.—Died 1696.

Pierre Corneille, the creator of French tragedy; his dramas

[1] See *Historical Questions,* page 145. [2] Ibid. page 148.
[3] Ibid. page 152.

are highly esteemed for their declamatory grandeur by his countrymen, by whom he is called 'Le grand Corneille.' —Died 1684.

Jean Baptiste Molière—the name Molière being assumed in place of Poquelin. Molière was the creator of French comedy, and takes the highest rank as a writer of humorous and satirical plays.—Died 1673.

Jean Racine, a dramatist, contemporary with Corneille and Molière ; the subjects of his plays are chiefly taken from classical and scriptural sources.—Died 1697.

Brueys, a theological writer and comic dramatist, but remembered only as the writer of a modernised version of an old play, in which in a droll litigation about sheep, occurs the phrase, 'revenons à nos moutons' (let us return to our sheep, or proper subject in hand)—a phrase now often quoted in a jocular sense. The name of this play is *L'Avocat Patelin.*

Lafontaine, a poet and fabulist, whose fables in verse will ever occupy a prominent place in French literature.—Died 1695.

Boileau, the most famous of the French satirical poets ; his principal works are his *Satires*, his *Epîtres*, and his *Art Poëtique*, a performance of high finish.—Died 1711.

Bossuet, Bourdaloue, and Massillon, three pulpit orators, distinguished for their fervid and persuasive eloquence. Bossuet, who died 1704, and Massillon, who died 1742, have left sermons which are probably not surpassed in splendour and grace of rhetoric by any similar compositions.

Rochefoucauld, a nobleman, author of *Maximes Morales*, noted for their searching and severe exposition of the motives of human conduct.—Died 1680.

Bruyere, or Labruyere, celebrated for works on character and manners.—Died 1696.

Bayle, a philosophical writer, who in his *Dictionnaire Historique et Critique*, has shewn all the qualities of his remarkable mind—wit, logic, learning, and scepticism.—Died 1706.

Vauban, a marshal of France in the reign of Louis XIV., and famous for his system of fortifying towns, on which subject he left several works at his death in 1707.

Malebranche, a writer on philosophical subjects ; his most famous work is his *Recherche de la Vérité.*—Died 1715.

Fenelon, Archbishop of Cambray, an eminent writer of works of a philosophical and religious nature, but best known as the author of the classic romance *Telemaque*, prepared for the special use of his pupil, a grandson of Louis XIV., the young Duke of Burgundy, who died 1714. Fenelon died 1715.

Fontenelle, author of numerous poetical, oratorical, dramatic, philosophical, and scientific writings. He possessed a fine temper and gentle disposition, and died when he had nearly finished his 100th year, 1757.

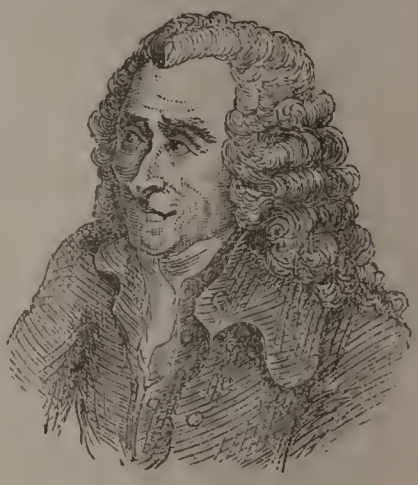
11. The following were the distinguished writers of the 18th century—

Rollin, a historian, whose writings, though refined in style, are diffuse and uncritical.—Died 1741.

Lesage, poet, dramatist, and novelist, famed as the author of *Gil Blas*.—Died 1747.

Baron de Montesquieu, a celebrated author and political philosopher; his great work, which occupied him 20 years, was *L'Esprit des Lois* (The Spirit of Laws), often quoted on questions of civil liberty.—Died 1755.

Voltaire—properly, Francis Marie Arouet de Voltaire—the most voluminous and distinguished of all the French writers—poet, dramatist, historian, and philosopher. By his subtle and sarcastic genius Voltaire exercised a prodigious influence over his countrymen, and powerfully aided in bringing on the Revolution.—Died 1778.



Voltaire.

Jean Jacques Rousseau, dramatist, novelist, and writer on speculative subjects, but extravagant in his theories, and intractable; though classed with French writers, he was a native of Geneva.—Died 1778.

The Count de Buffon, naturalist; Marmontel, novelist; La Harpe, literary biographer and critic; Raynal, historian; Helvetius, writer on philosophical subjects; D'Alembert and Condorcet, mathematicians; Lavoisier, chemist; Diderot, moralist and romance-writer; and St Pierre, author of *Paul et Virginie;* rank among the leading men of science and letters in France, in the latter part of the 18th century.

12. In the present century, France has had the following authors of note—

Baroness de Staël-Holstein, ordinarily called Madame de Staël, was daughter of Necker, the famous financier, and became celebrated for her novels and other productions; her best-known work is *Corinne, ou l'Italie* (Corinne, or Italy.)—Died 1817.

Laplace, a celebrated astronomer, author of the *Mécanique*

Céleste and *Système du Monde*, works of the highest value to science.—Died 1827.

Laurent de Jussieu, born at Lyon 1748, Professor of Botany in Paris, whose fame rests on his system of plants, known as the Jussieuan or Natural System, which is now generally adopted. The work in which his views are set forth is entitled *Genera Plantarum*.—Died 1836.

Decandolle, native of Geneva, follower of Jussieu, whose system of botany he improved, and author of several important works on the vegetable kingdom.—Died 1841.

Vicomte de Chateaubriand, a writer on political and speculative subjects ; his works are of a pious and imaginative kind, but want solidity.—Died 1848.

Béranger, a poet, celebrated for his lyrical and patriotic songs.—Died 1857. Jasmin was a contemporary poet in humble life, who wrote in the patois of the south of France.

Michelet, born 1798, a brilliant historian, and author of several polemical novels.

Lamennais, one of the most celebrated of the politico-religious writers in the present century.—Died 1854.

Sismondi, a native of Geneva, but of Italian descent, who finally resided in France ; he wrote on political economy, in which he adopted the advanced views of Adam Smith ; his greatest works, however, are the Histories of Italy and France, which are voluminous, and greatly appreciated.—Died 1842.

Victor Cousin, born 1792, an eminent writer on philosophical subjects and on education; his works are very numerous.

Guizot, born 1787, a writer of historical and political treatises, and a statesman of note in the reign of Louis-Philippe.

Thiers, born 1797, writer of the History of the French Revolution in several volumes, and an eloquent speaker, but unsound and unpractical in his notions of public policy.

De Tocqueville, an eminent writer on politics and the philosophy of history.—Died 1859.

Lamartine.

Lamartine, a lyrical and descriptive poet, born 1792 ; Victor Hugo, poet and novelist, born 1802 ; Balzac, novelist ; Paul de Kock, novelist ; Eugene Sue, novelist ; and Madame Dudevant, who calls herself George Sand, born 1804, are the principal writers of fiction in recent times.

Jean Henri Merle, who, for family reasons, assumed the name D'Aubigné, born at Geneva, 1794, but classed as a French writer; his well-known work is a *Histoire de la Réformation*, which has been translated into English.

Auguste Comte, an ingenious writer on mental philosophy, and founder of the system of speculation known as 'Positivism.'—Died 1857.

13. *What is Positivism?*—It is a philosophical system which rejects theology and metaphysics as fruitless speculations on things beyond the range of the human faculties, and confines itself to deducing the laws of positively ascertained phenomena.

Germany, &c.

14. *Is German literature of ancient date?*—There were many popular poems and other inartistic productions of an early period, but the classical German literature begins as late as the 18th century, with the writings of Klopstock, Goethe, and Schiller.

15. *What was the Nibelungen-lied?*—It was a series of old ballads, united so as to make one plot, of a heroic kind. *Nibelungen* was the name of an ancient royal race, and *lied* signifies a song. The *Nibelungen-lied* was sung by the minnesingers—troubadours of Germany.

16. *Have there been many German writers?*—Yes; although the literature is of comparatively recent origin, there has been a great abundance of writers, the sale of whose works forms a staple trade at Leipsic.

17. The following are the most noted writers and philosophers of Germany.—

Nicolas Copernicus—originally Copernik—a native of Prussia, eminent for his mathematical and astronomical knowledge. The system of astronomy which goes by his name is, however, not exclusively his; it is more the work of Kepler, Galileo, and Newton; but in his *De Revolutionibus Orbium*, Copernicus argues for the sun being the centre of the planetary system; from which circumstance he is usually called the originator of the present system of astronomy.—Died 1543.

Tycho Brahé, a native of Denmark, much of whose life was spent in Germany; he succeeded Copernicus as an astronomical discoverer, and added greatly to the general knowledge of the planets and stars.—Died 1601.

Kepler, a native of Wurtemburg, who for some time acted

as assistant to Tycho Brahé; his fame rests on his discovery of certain laws of light and of planetary motion, known as 'Kepler's Laws.'—Died 1630.

Puffendorf, native of Saxony, a celebrated jurist or writer on legal institutes. He was successively a professor at Heidelberg in Germany, and Lunden in Sweden, at which latter place he wrote his famed work, *De Jure Naturæ et Gentium* (The Laws of Nature and of Nations), which remains an authority on the subject.—Died 1694.

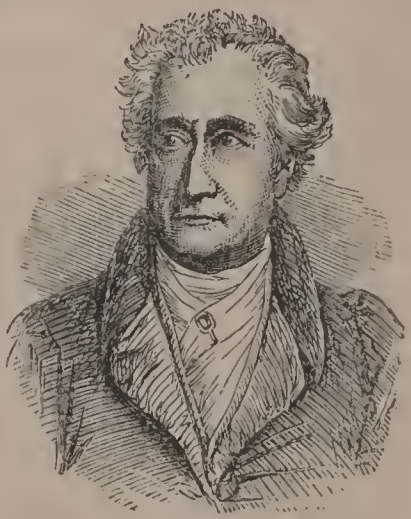
Leibnitz, a native of Leipsic, celebrated for his erudition and philosophical researches; he wrote numerous works on natural theology, the human mind, and the moral government of the world.—Died 1716.

Karl Linné, best known by his Latinised name, Linnæus, a native of Sweden, who attained to great celebrity as a naturalist, especially for his discoveries in botany, and classification of plants known as the *Linnæan* or Artificial System.—Died 1778.

Mosheim, a native of Lübeck, author of an Ecclesiastical History in Latin; also of works which contributed to the formation of a pure style of prose German composition.—Died 1755.

Lessing, a native of Saxony, dramatist and literary critic, who helped to emancipate German literature from corrupted French influences.—Died 1781.

Lavater, a native of Zürich, Switzerland, whose great work is a treatise on Physiognomy, or a method of determining character by the countenance. He was shot in the streets of Zürich when the French, under Massena, captured the city in 1799; but he lingered on till 1801.



Goethe.

Immanuel Kant, born at Königsberg, but of Scotch descent, became a professor in the university of his native city, and wrote various treatises on Reason and Ethics. In these are embraced the 'Kantian Philosophy,' or 'transcendentalism,' signifying that which transcends or goes beyond the limits of experience.—Died 1804.

Goethe, poet, dramatist, and novelist, the greatest of the German writers, born at Frankfort-on-the-Maine, 1749; his most famed production is *Faust*, a dramatic poem, of which there have been several translations.—Died 1832.

Klopstock, eminent as a German poet; his writings are chiefly lyrical and dramatic, but he is best known in England as author of the *Messiah*, a religious epic of a high order.—Died 1803.

Schiller, born in Wurtemberg, 1759, poet, dramatist, and historian; his fame mainly rests on his tragedies of the *Robbers*, *Wallenstein*, *Tell*, and *Marie Stuart*, and on his splendid lyrics.—Died 1805.

Kotzebue, a prolific German dramatist, one of whose plays, under the name of *The Stranger*, is known in England. He was assassinated at Mannheim 1819, on account of his hostility to the liberal movement.

The two Humboldts, brothers, natives of Prussia—Karl Wilhelm, the elder, famed for his philological treatises; died 1835. Alexander, one of the greatest of naturalists and geographers; his latest and best-known work is *Cosmos*, a disquisition on the physical structure of the universe.—Died 1859.

August Wilhelm von Schlegel, native of Hanover, lyrical poet, and writer of various works connected with literary criticism. He had a good knowledge of English, and translated Shakspeare into German.—Died 1845.

Dr Franz Joseph Gall, a native of Suabia, who studied medicine at Vienna, and there became the founder of phrenology; died 1828. Spurzheim, educated at Treves, associated himself with Gall, and became the popular expounder of the phrenological system, which he considerably extended.—Died 1832.

Niebuhr, born at Copenhagen 1776, mastered 20 languages before he was aged thirty. He wrote several historical and philological works; his best-known production is *Römische Geschichte* (History of Rome).—Died 1831

Neander—originally David Mendel—was born of Jewish parents at Göttingen, 1789, and adopted the name Neander on being baptised. He is allowed to be by far the greatest of ecclesiastical historians; his best-known work is his *Kirchengeschichte* (Church History), which shews extraordinary erudition.—Died 1850.

Baron Liebig, born at Darmstadt, 1803, one of the greatest chemists of the present day, at one time Professor of Chemistry at the University of Giessen, in Hesse, and now at Munich. He is the author of numerous and well-known works on chemical science, written chiefly to improve agriculture and sanitary knowledge.

German literature has latterly been enriched by the writings of Fichte, Schelling, and Hegel—philosophy: Reinhard, Paulus,

Schleiermacher, and Strauss—biblical criticism: Wolf, Hermann, Müller, the two brothers Grimm, Bopp, Benecke, Adelung, Lassen, Rosen, Lepsius, Herder, and Bunsen—philology and critical research: Winckelman, Heeren, Ranke, Von Raumer, and Mommsen—archæology and history: and Körner, Uhland, Heine, Rückert, and Freiligrath—poetry.

Schiller.

In prose-fiction, Germany has the productions of Richter, Tieck, Hoffman, Armin, Zschokke, Therese Huber, Wagner, Möser, Stilling, Goethe, and Freytag; few German novels, however, have been relished by English readers, to whom the general strain of German sentiment appears to be unintelligible.

18. *What is the general character of German literature in the present day?*—It is much less occupied with philosophical systems and metaphysical speculations than formerly. Numerous works are now produced on different branches of physical science, also on historical and antiquarian subjects.

The Netherlands, &c.

19. *What is the language of the Netherlands?*—It is the Dutch, a branch of the great Teutonic stock, to which belongs the modern German.

20. *Is Dutch literature of ancient date?*—No; until comparatively late times, the learned men of the Netherlands wrote in Latin, and generally Latinised their names; recently, there have been a number of writers in Dutch, but their works are little known beyond their own country.

21. The following are the more noted of the learned men of the Netherlands.—

Desiderius Erasmus—originally called Gheraerd—a native of Rotterdam, one of the most vigorous promoters of the Reformation, and writer of various philological and theological works.—Died 1536.

Arminius—originally James Hermann—born 1560, studied theology, and became the founder of the sect of Arminians, whose doctrines concerning the decrees of God and divine grace are opposed to those of Calvin, and have extensively prevailed in the Church of England.—Died 1609.

Hugo Grotius—originally De Groot—a native of Delft,

author of various political, theological, and historical treatises, likewise of poems in Latin verse ; his great work was *De Jure Belli et Pacis* (The Laws of War and Peace), which has been translated into various languages, and remains an authority on the subject.—Died 1645.

Spinoza, a native of Amsterdam, of Jewish descent, who spent much of his life as a meditative recluse at the Hague, where he wrote several works on ethics and philosophy. Spinoza's views are usually called atheistic ; strictly, they were pantheistic, and have never received any practical acceptance.—Died 1677.

Leuwenhoek, a native of Delft, where he spent his life in constructing microscopes, and in making discoveries in animal physiology by means of these instruments. When Peter the Great passed through the Netherlands, he visited Leuwenhoek, who, by a microscope, shewed him the circulation of the blood in the tail of an eel.—Died 1723.

Boerhaave, born near Leyden, 1668, became one of the most celebrated physicians and anatomists of the 18th century ; to his lectures at the University of Leyden pupils flocked from all parts of the civilised world.—Died 1738.

The list of modern Dutch writers in miscellaneous literature and poetry, includes Hooft, Vondel, Cats, Van der Palm, Van Lennep, Bilderdyke, and Da Costa.

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22. *Who was Karamsin?*—He was the most eminent prose writer that Russia has produced ; born 1766 ; his great work is a *History of the Russian Empire*, written in the Russian language, and highly esteemed.—Died 1826.

23. *Who was Pushkin?*—He was the most distinguished poet of Russia, born 1796 ; he wrote several narrative poems and dramas in the Russian language, and has been sometimes called the Russian Byron.—Died 1837.

24. *What is the literature of the Magyars?*—It is the literature of Hungary, composed in the Magyar language, which bears a resemblance to the Turkish. Specimens of Magyar poetry have been translated into English by Sir John Bowring.

25. *Who was Oehlenschläger?*—He was a celebrated Scandinavian poet and dramatist, born near Copenhagen, 1779. His works, which are highly appreciated in Denmark and Germany, extend to 41 volumes.—Died 1850.

English Literature.

1. *What is the nature of the English language?*—It is a composition of Anglo-Saxon, French, and Latin, with words from various other languages.

2. *How many words are there in the English language?*—There are upwards of 42,000, of which 13,000 are Anglo-Saxon, and 29,000 French and Latin—the Latin being imported chiefly through the French.

3. *What words are employed in speaking?*—In ordinary conversation, Anglo-Saxon words are almost exclusively used; uneducated persons employ only a limited stock of words—seldom more than a few thousands.

4. *What words are employed in literature?*—Some writers employ more Anglo-Saxon words than others. Examples of simple and nervous Anglo-Saxon are found in the works of Bunyan, and in the authorised version of the Bible.

5. *What writers are noted for the profuse use of words from the Latin?*—Addison, Samuel Johnson, Gibbon, and some others in the 18th century.

6. *Give one or two examples of words from the Anglo-Saxon and Latin having the same meaning.*—'Assemble' is from the Latin; 'meet together,' from the Anglo-Saxon. 'Exclaim' is from the Latin; 'cry out,' from the Anglo-Saxon. 'Ultimate' is from the Latin; 'the last,' from the Anglo-Saxon. In each of these examples the meaning is the same.

7. *In what works is the derivation of words made the subject of study?*—In treatises on Philology and Etymology;[1] derivations are also found in etymological dictionaries.

8. *What is the effect of using words from the Latin?*—The effect is to give variety and a certain dignity to sentences; but when used profusely, the composition becomes pompous, and scarcely intelligible to ordinary readers.

9. *What is now the plan followed by good writers?*—It is to make no particular choice of words, but to use such, whatever be their origin, as are best suited to express their ideas.

10. *When does English literature commence?*—It properly

[1] See *Exercises on Etymology*, by W. Graham, LL.D.—*Chambers's Educational Course.*

begins with the works of Chaucer and Gower in the 14th century, when the language had settled into its present composite form, although still uncouth in its orthography, and in some of its expressions. Spenser says of Chaucer—

'Dan Chaucer, well of English undefyled.'

Early English Writers.

11. *Who was Chaucer?*—Geoffrey Chaucer was the earliest English poet; he was born in London, 1328, and was employed at the court of Edward III.; as an ambassador to Genoa, he visited Petrarch, with whom he had congenial literary tastes; late in life he wrote his *Canterbury Tales*, which are an enduring monument of his genius.—Died 1400.

Chaucer.

12. *What is the nature of the Canterbury Tales?*—They are tales in verse, purporting to be related for mutual amusement by a party of equestrian pilgrims from the Tabard Inn, Southwark, to Canterbury. These tales are now little read on account of a number of the words being obsolete, or in an old orthography; but their merit places Chaucer in the first rank of English poets.

13. *Who was Gower?*—John Gower, a contemporary of Chaucer, was an English gentleman of property, who wrote several poems, some in Latin, and some in English; those in English are admired for their lively expression of natural feeling.—Died 1408.

14. *Who was Sir John Mandeville?*—He is usually reckoned the first English prose writer; about 1356 he wrote an account of his travels in foreign countries, a work consisting of a curious mixture of truth and fable, and valuable as a specimen of English prose composition in the 14th century.

15. *Who was John Wickliffe?*—He was a learned ecclesiastic (born 1324, died 1384), who executed a translation of the Scriptures from the Latin, which remains one of the valuable relics of the English language in the 14th century.[1]

[1] See *Historical Questions*, p. 94.

16. *Who was Richard of Cirencester?*—He was a monkish chronicler of the 14th century, famed for his history of the Anglo-Saxons, and a description of Britain in Latin, entitled *De Situ Britanniæ;* a manuscript of this last work was discovered at Copenhagen in 1747, and has been translated and published in England. Richard died about 1401.

17. *What promoted literature in the 15th century?*—The discovery of the art of printing, which was introduced into England by William Caxton about 1471.

18. *What was the first book printed in Britain?*—It was *The Game of Chess*, printed by Caxton, 1474; Caxton translated or wrote about sixty different books, all of which went through his own press before his death in 1491.

19. *Mention other early writers of note—*

Henry Howard, eldest son of the Duke of Norfolk, and usually called Earl of Surrey, was the first of the distinguished poets in England after Chaucer and Gower; his poems are chiefly lyrical, and are refined in style. Surrey was a gallant soldier, and conducted an important expedition into Scotland, 1542. Falling under the displeasure of Henry VIII., he was beheaded, 1547.

Sir Thomas Wyatt, lyrical poet, a contemporary of Surrey at the court of Henry VIII., remarkable for the tenderness of his songs and sonnets.—Died 1541.

Sir Thomas More, the pious and learned chancellor of Henry VIII., by whom he was barbarously condemned and beheaded, 1535,[1] wrote several works in Latin and English; his best known production is a curious philosophical work in Latin, under the title of *Utopia,* descriptive of an imaginary country, where everything is perfect. From this work comes the term 'Utopian,' signifying that which is chimerical or impracticable.

John Leland, the first English antiquarian writer, died 1552; and Roger Ascham, a writer of educational and other treatises, who assisted Queen Elizabeth in her classical studies; died 1568. These were two learned men of note in England at the middle of the 16th century.

Early Scottish Writers.

20. *What language was employed by the early Scottish writers?*—Some wrote in Latin; others wrote in the Scottish vernacular of the period, which bore a resemblance to the

[1] See *Historical Questions*, p. 97.

English of Chaucer, and which, with some modifications, now constitutes what is called the Scottish dialect.

21. *Mention the more remarkable Scottish writers previous to the reign of James VI.*—

Sir Michael Scott of Balwearie, distinguished for his learning and knowledge of the occult sciences ; among the ignorant, he was reputed to be a magician, and there are numerous mythic legends concerning his marvellous performances. He wrote several scientific treatises in Latin.—Died 1291.

John of Fordoun wrote in Latin a work, styled the *Scoti-chronicon*, purporting to be a history of Scotland from the beginning of the world ; it brought the history down to the death of David I. in 1153. Fordoun died about 1385. His work was afterwards extended to 1437, by Walter Bower, abbot of Inchcolm.

John Barbour, archdeacon of Aberdeen in 1357, is reckoned the earliest Scottish poet. Some of his poems are lost ; that which remains is *The Bruce*, a versified history of the transactions by which the family of Robert Bruce obtained the Scottish crown.—Died 1395.

Andrew Wyntoun, prior of the monastery of St Serf, Lochleven, about 1420, completed his *Orygynale Cronykil of Scotland*, a historical narrative in verse.

James I. of Scotland, an accomplished prince, educated in England, wrote some elegant poetry ; his best known work is *The King's Quhair* (Quire or Book), which contains poetry equal to that of any of his English contemporaries. This royal poet was barbarously assassinated, 1437.

Blind Harry is the name given to a wandering poet, blind from his infancy, who recited *The Adventures of Sir William Wallace* in verse, which, in a modernised form, remains a popular favourite. Blind Harry flourished about 1460.

William Dunbar occupies a high rank among Scottish poets ; his poems, allegorical, moral, and comic, were composed about 1491 ; they are still highly relished, and would be more so but for their antiquated orthography.—Died about 1520.

Gavin Douglas was a younger son of Archibald, fifth Earl of Angus, and became bishop of Dunkeld ; about 1500 he wrote several poems, the longest of which is *The Palace of Honour ;* he also produced a Scottish metrical version of Virgil's *Æneid*.—Died 1521. Scott says of him in *Marmion*—

'He gave rude Scotland Virgil's page.'

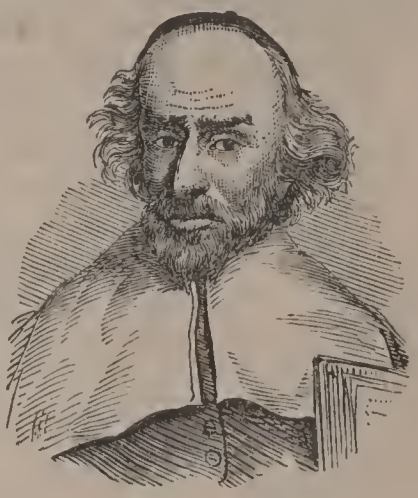
Sir David Lyndsay, born about 1490, was at first a

companion of James V. when a boy, and afterwards filled the office of Lord Lyon King-at-arms; Lyndsay wrote some remarkable poems, chiefly satiric and humorous, which contributed to bring about the Reformation in Scotland.—Died about 1555.

James V. of Scotland is reputed to have written some humorous but somewhat coarse songs and ballads.—Died 1542.

George Buchanan, born 1506, was eminent for his scholarship, and his exertions in favour of the Reformation; excepting two pieces, he wrote in Latin, into which language he translated the Psalms of David. Buchanan became principal of St Leonard's College, St Andrews, 1566, and afterwards acted as tutor to James VI.; his greatest work is a *History of Scotland*, in Latin, which has been translated into English.—Died 1582.

John Knox, the Scottish Reformer, who died in 1572, and was characterised by the Earl of Morton as 'one who never feared the face of man,' wrote several theological works; but his chief production was a *History of the Reformation of Religion within the Realm of Scotland.*



John Knox.

Alexander Montgomery, a poet who wrote about 1568; his principal work is *The Cherry and the Slae* (sloe), a rural allegory abounding in beautiful imagery.

James VI. of Scotland, who became James I. of England, was a voluminous author; his works most frequently referred to are *Basilicon Doron* (Royal Gift), or Instructions concerning Government to his son Henry; *Dæmonologie*, a dialogue on witchcraft; and *A Counterblast to Tobacco*, written for the purpose of bringing tobacco-smoking into disrepute.—Died 1625.

John Napier of Merchiston, born 1550, attained to lasting fame by his discovery of Logarithms—a short method of calculation, valuable in many mathematical operations, described by him in a treatise on the subject.—Died 1617.

John Spottiswood (1565—1639), successively Archbishop of Glasgow and St Andrews in the reign of James VI., was author of a *History of the Church of Scotland*, which is considered to be, on the whole, a faithful and impartial narrative.

William Drummond (1585—1649) was a poet in Scotland, contemporary with Ben Jonson, who visited him at his seat of

Hawthornden, in the vicinity of Roslin. Drummond's poems consist of madrigals, epigrams, sonnets, and other pieces, distinguished by a play of fancy and harmony of versification.

The Era of Elizabeth, James I., and Charles I.—1553 to 1649.

22. *What change took place in English Literature in the reign of Elizabeth?*—It became more truly national, and acquired a vigour and elegance far beyond what it had hitherto possessed; poetry and the drama, in particular, rose to a high degree of excellence.

23. *To what was the change imputed?*—To the outburst of free opinion consequent on the Reformation, also to the favour shewn to literature and men of genius by Queen Elizabeth, which favour was continued by James I. and Charles I. with the view of counteracting Puritanism.

24. *Mention the principal poets and dramatists in this era*—

Thomas Sackville, Earl of Dorset (1536—1608), writer of a poem entitled *The Mirrour for Magistrates*, remarkable for its vigour of allegorical description.

John Lyly, born about 1554, flourished as a dramatist in the reign of Elizabeth, but is only remembered as the writer of two works, entitled *Euphues, or the Anatomy of Wit*, and *Euphues and his England*. They are written in an affected, bombastic style, and gave rise to the term *Euphuism*, a method of speaking in bombastic and allegorical language, which was in vogue at the court of Elizabeth.

Sir Philip Sidney (1554—1586), a most accomplished writer of sonnets, and called the English Petrarch. He was mortally wounded in a battle in the Netherlands, 1586, and among numerous elegies on his death was a famed one by Spenser, under the title of *Astrophel*.

Christopher Marlowe (1565—1593), author of a poem, *The Passionate Shepherd to his Love*, beginning—

'Come, live with me and be my love,'

by which he is best remembered; but he was also the author of a number of dramas of merit.

Edmund Spenser (1553—1599), the most luxuriant and melodious of all our descriptive poets; his great work is *The Faery Queen*, which presents a wondrous scene of enchantment and beauty. Spenser had a large grant of lands in Ireland from Queen Elizabeth, but, driven from that country, he died

in poverty at Westminster. From him comes the term 'Spenserian stanza'—a verse of eight lines, each of ten syllables, with a concluding line in twelve syllables, called an Alexandrine.

Southwell, Daniel, Drayton, Fairfax, Sir Henry Wotton, Donne, and Joseph Hall, are all celebrated for their poetry in different departments, in the reign of Elizabeth.

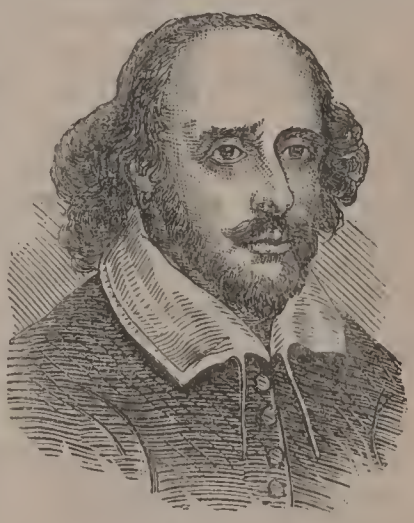
Ben Jonson (1574—1637), great as a poet and dramatist. Some of his lyrics—for example, that beginning—

'Drink to me only with thine eyes,'

are exquisitely beautiful. Among his dramas are, *Every Man in his Humour*, *The Silent Woman*, *The Fox*, *The Alchemist*, and *Cynthia's Revels*. On his tomb in Westminster Abbey is inscribed, 'O Rare Ben Jonson.'

Francis Beaumont (1585—1616) and John Fletcher (1576—1625), were two young men of genius who united their powers in a remarkable manner to compose plays, of which they wrote fifty-two; these dramas, tragical and comic, still keep their place in English literature.

William Shakspeare, born at Stratford-on-Avon, 1564, is the greatest of English poets and dramatists—his works shewing the most extraordinary versatility of fancy, felicity of expression, and knowledge of human character. He died 1616, and it was only after his decease that the grandeur of his genius was appreciated. The first edition of his works was published in 1623.



Shakspeare.

Philip Massinger (1584—1640), a distinguished tragic poet and dramatist in the reign of James I.; his play, entitled *A New Way to Pay Old Debts*, still keeps its place in the acted drama.

Sir John Suckling, author of several beautiful small poems; Robert Herrick, a writer of exquisite lyrics; and Richard Lovelace, a writer of odes and sonnets—rank among the high-class poets at the early part of the 17th century.

25. *Mention the more distinguished prose writers of this era*—Sir Philip Sidney, already noted as a poet, was an accomplished prose writer; his best known work in this

department was *Arcadia*, a heroic romance, which was read and admired at the court of Elizabeth and her successor.

Richard Hooker (1553—1600), a learned theologian, author of the *Laws of Ecclesiastical Polity*, a work which is considered to be a powerful vindication of the Church of England and of ecclesiastical establishments generally.

Francis Lord Bacon (1561—1626), chancellor of England in the reign of James I., a luminary of learning, and author of several philosophical works ; his great work is the *Instauration of the Sciences*, in which is comprehended the *Novum Organum*, defining the proper method of prosecuting philosophical researches. This great statesman was convicted of corrupt practices, and besides being fined £40,000, was for a time confined in the Tower—an often-quoted instance of high intellect associated with imperfect moral principle. Bacon's *Essays* are well known.

William Camden (1551—1623), author of *Britannia*, a celebrated work in Latin, giving an account of Britain from remote antiquity, and of which a translation appeared in 1610 ; it is a valuable repository of antiquarian and topographical knowledge.

Robert Burton (1576—1640), a country clergyman, author of a learned and curious work, *The Anatomy of Melancholy*, which has been frequently reprinted.

Thomas Hobbes (1588—1679), ordinarily called Hobbes of Malmesbury, a learned philosophical writer ; his chief works are the *Leviathan*, and a *Treatise on Human Nature*, both containing profound views, but abounding in doctrines which have led to much controversy.

John Selden (1584—1654), a learned writer and distinguished political character ; his largest work is a *Treatise on Titles of Honour*, but it is less known than *Table-Talk*, a collection of his best sayings published after his death.

Jeremy Taylor (1613—1667), an eminent divine, and author of *The Liberty of Prophesying*, *Holy Living* and *Holy Dying*, and other theological and devotional works, which are highly prized for their learning, piety, and beauty of style.

Sir Thomas Browne (1605—1682), an able antiquary and physician, author of *Religio Medici* (The Religion of a Physician) and an *Inquiry into Vulgar Errors*, a work which displays great eloquence, learning, and shrewdness.

Thomas Decker, a writer of plays, and author of *The Gull's Horn Book*, a satirical work on the fashionable follies of the day ; Sir Thomas Overbury, a witty and ingenious describer of character ; Owen Feltham, author of *Resolves—Divine*,

Moral, and Critical; and Peter Heylin, a writer on geography —all flourished in the reign of James I.

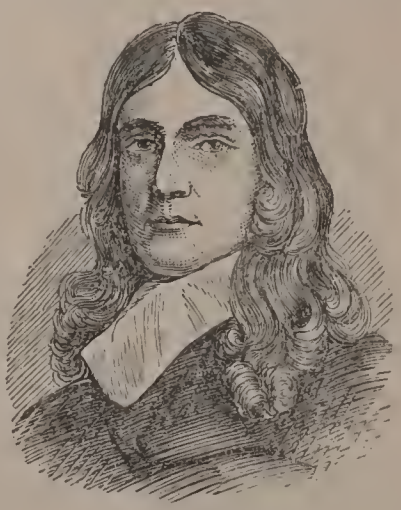
Charles I. was an accomplished writer, besides being a patron of art. A work has been usually ascribed to him, entitled the *Eikon Basilikē* (Royal Image or Picture), which contains an affecting description of his position, character, and mind, during his confinement in the Isle of Wight. The work, which did not appear till after his decease, is now believed not to be Charles's composition, but it probably was revised and added to by him.

John Taylor, an enthusiastic royalist in the reign of Charles I., who had originally been a waterman on the Thames, kept a public-house in London, and wrote doggerel verses, which are now considered curious, as descriptive of events of his time. Taylor described himself 'His Majesty's *Water Poet*,' by which designation he is still spoken of. He made an adventurous journey to the Highlands of Scotland, regarding which he narrates some surprising incidents.—Died 1654.

26. *When did English newspapers begin?*—The earliest English newspapers or news-letters belong to the reign of James I., and were in the form of small quarto pamphlets. The first appeared in 1619; but newspapers embracing general intelligence did not appear until the reign of Charles I.

The Era of the Commonwealth to the Revolution—1649 to 1689.

27. *What was the condition of literature during this era?*—In England, there was a series of distinguished writers in poetry and prose; but in Scotland literature suffered a remarkable eclipse, and did not prosper till long afterwards.



John Milton.

28. *Mention the names of some of the English poets in this era.*—Abraham Cowley, Edmund Waller, Sir John Denham, Charles Cotton, the Earl of Roscommon, John Philips, and Sir Charles Sedley. But the works of these and some others are now little read, and the really great poets of the period possessing a lasting fame are as follows—

John Milton (1608—1674), author of *Paradise Lost*, a poem in blank verse—the greatest epic in

the English language; he also wrote a number of minor poems of great beauty, including *L'Allegro*, *Il Penseroso*, and *Comus*. Milton also distinguished himself as a writer of treatises in favour of the Commonwealth and the principles of civil liberty.

Samuel Butler (1612—1680), author of *Hudibras*, a satirical poem, written after the Restoration, and designed to burlesque the republican and over-zealously religious party which had recently held sway.

John Dryden (1631—1700), a poet and dramatist by profession, who flourished in London for many years after 1660. Dryden (called by his admirers 'Glorious John') is chiefly renowned for his poems, among which are included, *Absalom and Achitophel*, a satire, the *Year of Wonders*, *Mac Flecnoe*, and *Fables;* also, *Alexander's Feast, or the Power of Music, an Ode for St Cecilia's Day*, which is now better known than all his other poems. He also translated Virgil's *Æneid* into English verse.

Thomas Otway (1651—1685), a young contemporary of Dryden, noted for his tragedy of *Venice Preserved.*

29. *Mention the most noted prose writers of this era—*

Edward Hyde, Earl of Clarendon (1608—1674), who was Lord Chancellor for several years after the Restoration, wrote a *History of the Rebellion*, or great civil war in England, a voluminous work, which is prized for its liveliness of style and accuracy of facts.

Izaak Walton (1593—1683), ordinarily styled 'Old Izak Walton,' is renowned as the author of the *Complete Angler*, a work full of pleasing observations on rural subjects, which appeared in 1653; it has been often reprinted.

John Evelyn (1620—1706), a gentleman of easy fortune, who distinguished himself by writing several scientific works in a popular style; he is best remembered as the author of *Sylva, or a Discourse on Forest Trees*, and of a *Diary*, which has proved a most valuable addition to our store of historical materials.

John Locke (1632—1704) the greatest philosophical writer of the period; his principal production is the *Essay on the Human Understanding*, still a standard work.

Samuel Pepys (1632—1703), a contemporary of Evelyn; like him, he wrote a diary, styled his *Memoirs*, which abounds in amusing particulars concerning the court of Charles II. and the manners of his day.

Dr Ralph Cudworth (1617—1688), an eminent divine and philosophical writer; his principal production is the *True*

Intellectual System of the Universe, a work of great learning, acuteness, and loftiness of thought, the object of which was to overthrow certain atheistical theories.

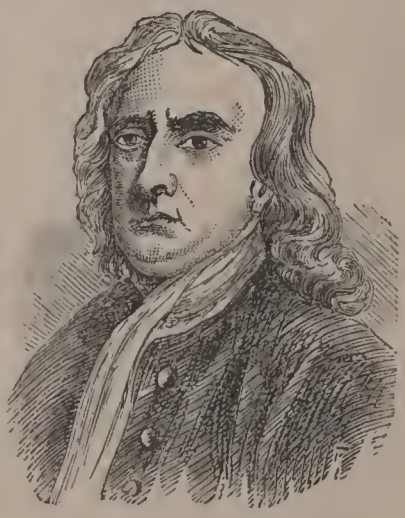
Barrow, Tillotson, Sherlock, Stillingfleet, South, Wilkins, Pearson, and Sprat, were all divines in the Church of England after the middle of the 17th century, celebrated for their theological writings—sermons in particular—which are still highly esteemed.

Richard Baxter, John Owen, John Flavel, and Matthew Henry were all celebrated Nonconformist preachers after the middle of the 17th century, and their works still hold a high place in theological literature.

John Bunyan (1628—1688), the son of a tinker, was persecuted after the Restoration for holding unlawful Nonconformist assemblies; while in prison on a charge of this kind, he wrote the *Pilgrim's Progress from this World to that which is to come*—an allegory composed in simple but singularly effective English, which remains, perhaps, the most popular work in the language.

Sir William Temple (1628—1699), was a noted diplomatist, statesman, and miscellaneous writer, who possesses a high reputation as a polisher of the English language. From his younger brother, Sir John Temple, the late Lord Palmerston (Henry-John Temple) was descended.

Sir Matthew Hale (1609—1676), celebrated as a learned and upright judge in the time of the Commonwealth and Charles II., was the author of various works chiefly on natural philosophy. His principal theological work, partaking of Calvinistic views, is entitled *Contemplations, Moral and Divine.*



Newton.

The Honourable Robert Boyle (1626—1692), son of the Earl of Cork, was eminent as a writer on natural philosophy and theological subjects. He instituted and endowed the 'Boyle Lectures,' to combat atheistical doctrines, and these are still delivered annually.

Sir Isaac Newton (1642—1727) holds by universal consent the highest rank among the natural philosophers of ancient and modern times. His great work is in Latin, and ordinarily known as the *Principia* (Mathematical Principles of Natural Philosophy). Newton, who was noted for his piety

and amiability of character, wrote also some treatises on theological subjects.

John Ray (1628—1705), an eminent naturalist at the middle of the 17th century; he was the author of some treatises on plants and geography, but is best remembered as the writer of a work first published in 1691, entitled *The Wisdom of God in the Works of Creation.*

Gilbert Burnet (1643—1715), a native of Edinburgh, at first a Presbyterian minister in Scotland, and at last, by favour of William III., Bishop of Salisbury; his great work is his *History of My Own Times*, giving an outline of the events of the civil war, and a full narrative of what took place from the Restoration till 1713. Burnet's work remains a standard book in English literature.

The Era of the Reigns of William III., Anne, and George I.—1689 to 1727.

30. *Was literature in this era independent of support from private patrons?*—No; following an ancient practice, it was still customary for writers to secure some kind of encouragement from wealthy and titled persons before adventuring on publication; in return for which they generally appended a dedication to their patron.

31. *What were Grub-street writers?*—They were an abject class of authors who lived in and about Grub Street, a low street in London, and were notorious for their slanderous inventions and mercenary dedications.

32. *Why did not writers generally depend exclusively on public support?*—Because, as yet, the number of readers and purchasers of books was limited; it is only in recent times that authors have been able to depend exclusively on public patronage, and to care little for any special private favour.

33. *Who were the British Essayists?*—They were a series of writers of essays on men and manners, who commenced this entertaining species of literature in the reign of Queen Anne. The essays appeared in certain small periodicals, the earlier of which were the *Review*, *Tatler*, and *Spectator.*

34. *Mention the principal writers in the era from* 1689 *to* 1727—

Daniel Defoe (1661—1731), miscellaneous writer and novelist; best known as the author of *Robinson Crusoe*, a fiction universally appreciated; he also wrote a satirical poem,

styled the *True-born Englishman*, and a *History of the Union of England and Scotland*. Defoe is likewise celebrated as the earliest of the essay writers; his productions in this department appeared in a periodical called the *Review*, 1704.

Sir Richard Steele (1675—1729) was an Irishman by birth, who became popularly known in London as 'Jovial Dick Steele;' he organised the *Tatler*, 1709, and afterwards the *Spectator*, 1711, in both of which works he was ably assisted by Addison. Steele possessed great fertility of invention, as respects incident and character, and his papers abound in inimitable touches.

Joseph Addison (1672—1719), poet, dramatist, and miscellaneous prose writer, assisted Steele in the *Tatler*, also in the *Spectator*, to which he contributed many papers of great literary finish, including those on Sir Roger de Coverley. Johnson says of him, 'whoever wishes to attain an English style, familiar but not coarse, and elegant but not ostentatious, must give his days and nights to the volumes of Addison.'

Matthew Prior (1664—1721), a poet whose works include odes, songs, epistles, epigrams, and tales—all beautiful in versification, and full of humour and fine feeling.

Jonathan Swift (1667—1745), a poet and miscellaneous and political writer, whose works abound in satire and invective; his best known productions are the *Tale of a Tub* and *Gulliver's Travels;* the purity of his prose style renders it a model of English composition. Swift occupied the position of dean of St Patrick's Cathedral, Dublin, and is ordinarily spoken of as 'Dean Swift.'

Pope.

Alexander Pope (1688—1744), an eminent poet, celebrated for his *Essay on Man*, which abounds in splendid passages which are constantly quoted, also the *Rape of the Lock*, and the *Dunciad;* this last was a severe satire on inferior Grub-street poets and pretenders. Pope's verse is exceedingly fluent, and he shews an acute knowledge of human character.

Henry St John, Viscount Bolingbroke (1678—1751), wrote a number of historical and speculative treatises, which are eloquent and imaginative, but generally unsound in principle;

his works extend to several volumes.[1] Pope opens his *Essay on Man* with an address to Bolingbroke—

> 'Awake, my Saint John! leave all meaner things
> To low ambition and the pride of kings.'

Thomas Parnell (1679—1718), a poet, contemporary with Swift and Pope, best remembered for his poem, *The Hermit.*

John Gay (1688—1732), poet and dramatist, author of *Trivia, or the Art of Walking the Streets of London; Fables,* and the play of the *Beggar's Opera;* he also wrote various songs and ballads, of which *Black-eyed Susan* remains one of the most popular.

Tickell, and Ambrose Philips, as poets; and Rowe, Lillo, Congreve, Vanbrugh, Farquhar, and Cibber, as dramatists, considerably enriched the literature of the first half of the 18th century.

Lady Mary Wortley Montagu (1690—1762), eldest daughter of the Duke of Kingston, who had lived with her husband at Constantinople, became celebrated for her *Letters,* which are models of the epistolary style—easy, familiar, and elegant, and interesting from their pictures of eastern manners and their fashionable gossip.

Anthony Ashley Cooper, third Earl of Shaftesbury (1671—1713), famed as a metaphysician; his great work is entitled *Characteristics of Men, Manners, Opinions, and Times;* as a moralist he maintains doctrines in opposition to Hobbes.

Dr George Berkeley (1684—1753), who became Bishop of Cloyne, in Ireland, was, like Shaftesbury, eminent as a writer on metaphysical subjects; his works, of which his *Theory of Vision* is the most remarkable, form an important landmark in philosophical science. His system is generally spoken of as *idealistic*—that is, a system which makes the reality of the world depend on the human consciousness of it.

Dr Francis Atterbury, Dr Samuel Clarke, Dr William Lowth, and Dr Benjamin Hoadly, were all celebrated English divines in this era, and have left theological works of great note. With these writers may be associated Charles Leslie, author of a work, still popular, *A Short and Easy Method with the Deists.*

Dr Humphrey Prideaux (1648—1724), was author of *The Connection of the History of the Old and New Testaments,* a work highly esteemed, and invaluable to all students of divinity.

[1] See *Historical Questions,* p. 121.

35. *Who was Joe Miller?*—He was a facetious and popular comedian, who acted at Drury Lane Theatre in the early part of the 18th century, and died 1738. After his death, a volume of jests, collected by a literary man named Mottley, was issued as *Joe Miller's Jests;* and the name 'Joe Miller' has ever since been associated with books of this kind.

The Era of the Reign of George II.—1727 to 1760.

36. *What was remarkable in this era?*—The revival of literature in Scotland after a long depression. The revival was of two kinds—the rise of poets who wrote in the Scottish dialect, and were therefore distinctly national, and the rise of writers, Scotsmen by birth, whose works were a contribution to English literature.

37. *Mention some of the national poets of Scotland at this period—*

The first place is due to Allan Ramsay (1686—1758), who wrote many popular ballads and songs; but the work from which he derives lasting fame is the *Gentle Shepherd*, a pastoral in the Scottish dialect of singular beauty —perhaps the finest pastoral ever written—which appeared in 1725. Ramsay lived and died in Edinburgh, where a monument has lately been erected to his memory.

Allan Ramsay.

The poets of Scotland of lesser note in this era were Sempill of Beltrees, William Hamilton of Bangour, Robert Crawford, Sir Gilbert Elliot, and Rev. John Skinner.

38. *Who were the writers, Scotsmen by birth, who at this time enriched English literature?*—Thomson, Mallet, Hume, Smollett, and some others. The more noted of this class take their place among English writers in the following list—

James Thomson, born at Ednam, near Kelso, 1700, author of *The Seasons*, a poem in blank verse, abounding in beautiful rural imagery and fine feeling; he also wrote *The Castle of Indolence* and some other poems. Thomson died in 1728, and was buried at Richmond. His tomb is referred to in a mellifluous and tender Ode on his death by Collins—

'In yonder grave a Druid lies,
Where slowly winds the stealing wave,
The year's best sweets shall duteous rise,
To deck its Poet's sylvan grave!

Remembrance oft shall haunt the shore,
When Thames in summer wreaths is drest,
And oft suspend the dashing oar,
To bid his gentle spirit rest!'

William Collins (1720—1756), famed for his odes, particularly his *Ode to the Passions*, his *Dirge in Cymbeline*, and other poems characterised by great imagination and sweetness.

Dr Isaac Watts (1674—1748), a name ever to be pronounced with reverence; he was the author of numerous small poems and hymns of great beauty and simplicity; he likewise wrote treatises on *Logic* and on the *Improvement of the Mind*.

Michael Bruce, a youthful poet in Scotland, who died 1767, composed a number of beautiful Scripture paraphrases and other pieces, which have been much admired.

Dr Samuel Johnson (1709—1784), 'the Leviathan of English literature,' scholar, poet, essayist, lexicographer, and miscellaneous writer. Beginning the profession of an author about 1731, he wrote *London*, a satire in verse; *The Rambler* and *Idler*, two series of essays; *Rasselas; Lives of the Poets*, and various other works; but his great production was his *Dictionary of the English Language*, which occupied him seven years, and appeared in 1755. Johnson visited the Hebrides in 1773, and wrote an account of his journey.

Samuel Johnson.

William Somerville (1692—1742), author of *The Chase*, a poem on field-sports; William Shenstone (1714—1763), pastoral and elegiac poet; David Mallet (1700—1765), writer of ballads, one of which, *William and Margaret*, is of particular excellence; Mark Akenside (1721—1770), author of *Pleasures of the Imagination*, a poem more classical than popular; and George Lord Lyttleton (1709—1773), writer of various poems of merit—were among the distinguished literary men in this era.

Thomas Gray (1716—1771), a poet who, though writing little, greatly excelled most of his contemporaries; his poem,

Elegy written in a Country Churchyard, is deservedly among the most popular in the language.

David Hume (1711—1776), eminent as a metaphysician and historian; his first production was his *Treatise on Human Nature*, published in 1738, and the views in which were of a sceptical tendency. Hume, however, is best known by his *History of England*, which was not completely issued until 1762; this history, though popular from the ease and elegance of the narrative, is now considered to be not a good authority.

Henry Fielding (1707—1754), the greatest of the 18th-century novelists, but so coarse in some of his pictures of character, that he is now less popular than formerly; his principal works are *Joseph Andrews*, *Tom Jones*, and *Amelia*, which have been often reprinted.

Tobias George Smollett (1721—1771), distinguished as a historian, novelist, and poet, made literature a profession. He wrote a continuation of Hume's history, but his chief popularity is derived from his *Roderick Random*, *Peregrine Pickle*, and *Humphrey Clinker*, novels which abound in characteristic humour; he also wrote some poems, the most admired being his *Ode to Independence*. Smollett stands prominently out as an author at the close of the reign of George II., and commencement of the reign of George III.

Samuel Foote (1721—1777), an actor, author of humorous plays and farces at one time very popular, and whose witticisms are scattered through the old jest-books.

Samuel Richardson (1689—1761) was a printer in London, who acquired celebrity as a novelist; his works are *Pamela*, *Clarissa Harlowe*, and *Sir Charles Grandison*, all very voluminous and tedious, but acknowledged to be true pictures of the human character.

39. *When did Magazines begin?*—The *Gentleman's Magazine*, the first of this class of monthly periodicals, was commenced in 1731, by Edward Cave, who employed Samuel Johnson as one of its contributors.

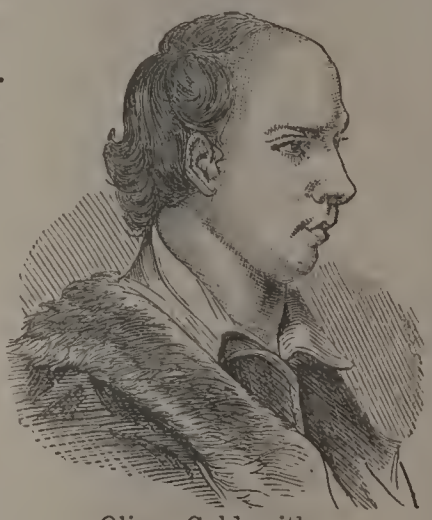
40. *When did Encyclopædias begin?*—The first English Encyclopædia, or Dictionary of Universal Knowledge, was that of Ephraim Chambers, published in 1728, and often reprinted until superseded by the later encyclopædias.

41. *When did Annual Registers begin?*—The first was commenced by Robert Dodsley, a bookseller in London, in 1758, and is still carried on. Dodsley, who was originally a footman, wrote a poem, *The Muse in Livery*, and did service to literature as a collector and publisher of old plays and poems.

The Era of the Early Part of the Reign of George III. —1760 to 1800.

42. *Mention the more noted authors of this era.*—Some of the distinguished writers of the reign of George III. had already risen to fame in the reign of George II.—for example, Hume, Smollett, and Johnson. Leaving out these, the following were among the more eminent writers of this period:

Oliver Goldsmith (1728—1774), a native of Ireland, bred to medicine, but an author by profession. He wrote the beautiful and well-known poems, *The Traveller* and *The Deserted Village;* the exquisite novel, *The Vicar of Wakefield;* the plays, *She Stoops to Conquer* and *The Good-natured Man;* besides other works of much excellence.



Oliver Goldsmith.

James Boswell (1740—1795), a young advocate at the Scottish bar, took an extraordinary fancy for Johnson, and frequently visiting him in London, collected his sayings in his celebrated *Life* of that personage, one of the most amusing works ever written. Boswell also narrates his *Tour to the Hebrides* with Johnson in 1773.

James Macpherson (1738—1793), originally a schoolmaster in the Highlands, and acquainted with Gaelic, wrote *The Poems of Ossian*, founded on scraps of poetic legend—which, unfortunately for his reputation, he represented as the real composition of Ossian, son of Fingal, a Celtic hero or bard of the 4th century.

Thomas Chatterton, born 1752, a youth of precocious poetic genius, who in a fit of desperation killed himself with arsenic, 1770, wrote some odes and other poems as avowedly his own productions, but is chiefly remarkable for imposing many others as compositions of the 15th century.

Dr Thomas Percy, latterly Bishop of Dromore, editor of the *Reliques of English Poetry*, in which several old songs and ballads are revived; and Thomas Warton, author of a *History of English Poetry*, were two literary celebrities between 1765 and 1780.

William Falconer, born in Edinburgh about 1730, and bred

a sailor, wrote the *Shipwreck*, a poem which became a favourite from its vivid and accurate descriptions. The author perished at sea, 1769, thus in the end terribly realising his own poetic fancies.

James Beattie (1735—1803), a native of Kincardineshire, attained celebrity as the author of the *Minstrel*, a didactic poem in the Spenserian stanza, also for his ethical work, an *Essay on Truth*.

Christopher Smart, author of the *Song to David* (died 1770); William Mickle, a native of Dumfriesshire, author of *Cumnor Hall*, and other poems of merit (died 1789); and Thomas Moss, author of *The Beggar's Petition* (died 1808), are numbered among the noted writers of this era.

Dr John Wolcot, a physician in London, wrote, between 1778 and 1808, a large number of satirical pieces in verse, under the adopted name of Peter Pindar; these effusions were once exceedingly popular, but are now nearly all forgotten. Wolcot died 1819.

Mrs Barbauld (1743—1825) occupied a respectable place as a literary lady in this era. She wrote poems, lyrical and devotional, and some very excellent essays. Her contributions to *Evenings at Home*, a work for children, are well known.

Sir William Jones (1746—1794), an eminent linguist, with able, statesman-like views, performed important services, by his oriental researches, particularly in connection with the languages and antiquities of India.

Joanna Baillie.

Joanna Baillie (1762 — 1851), daughter of a Scottish parish-minister, wrote a series of dramas, entitled *Plays on the Passions*, which appeared about 1798, but are unsuited for acting.

Richard Brinsley Sheridan, born in Dublin 1751, became celebrated as a writer of clever and popular plays; in 1775, he produced his comedy, *The Rivals*, and shortly afterwards, *The School for Scandal* and *The Critic*. Sheridan had also a political career, his speeches in parliament being marked by flashes of eloquence and wit. From his singular improvidence, he died in distress, 1816.

George Colman the Younger, a comic dramatist, contemporary with Sheridan, wrote a number of popular plays,

including *The Heir at Law*, and the musical opera of *Inkle and Yarico*, between 1784 and 1800; he afterwards produced a variety of clever poetical effusions.—Died 1836.

Thomas Holcroft (1745—1809) was a noted translator of works from the French, one of the best known of these productions being the *Tales of the Castle*, from the French of Madame de Genlis. He was also the author of thirty plays, the most admired of which is *The Road to Ruin*, a comedy.

Mrs Elizabeth Inchbald, an actress about 1780, gained celebrity as author of two tales, *The Simple Story*, and *Nature and Art*; latterly, she edited a well-known collection of plays.—Died 1821.

Laurence Sterne, born in 1713 at Clonmel, in Ireland, was the son of an officer in the army, and became a clergyman in England; as a novelist, he was next in order of time and genius to Fielding and Smollett. Excelling in the comic and pathetic, he wrote *Tristram Shandy*, which was completed in 1767, and *The Sentimental Journey*, which appeared in 1768, the year of his death.

Horace Walpole, Earl of Orford, third son of Sir Robert Walpole—born 1717, was a noted man of letters in this era. He revived romance-writing by producing *The Castle of Otranto*, but he has had greater fame on account of his *Letters*, which embrace a vast amount of curious information regarding the fashionable world during his time. His dwelling, Strawberry Hill, was an extraordinary museum of curiosities.—Died 1797.

Henry Mackenzie, born at Edinburgh 1745, eminent as the author of *The Man of Feeling*, a novel, which appeared in 1771; he wrote some other novels of less note, and was the principal contributor to the *Mirror* and *Lounger*. He long survived these literary efforts, and died in 1831.

Frances Burney (1752—1840), authoress of *Evelina*, a simple novel of great merit, published in 1778, also of *Cecilia*: afterwards, she was a keeper of the robes to the queen of George III., an office of which she gives an account in her *Diary*, a work in several volumes. Miss Burney was married in 1793 to a French refugee officer, the Count d'Arblay, by whose name she accordingly became known.

William Beckford (1759—1844), a wealthy English gentleman, was the author of *Vathek*, an Arabian tale, which appeared in 1786. Byron praises this romance for its correctness of costume, beauty of description, and power of imagination. Beckford wrote some other works of less note.

Sophia and Harriet Lee, two sisters who died at an advanced

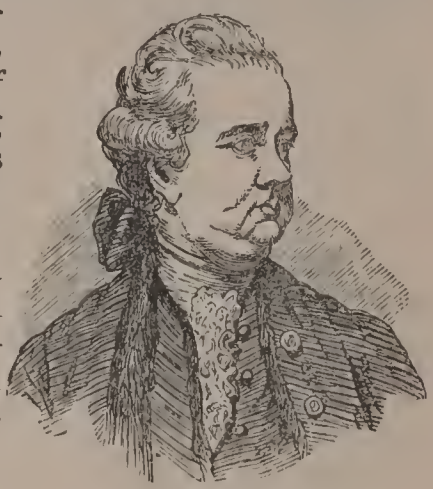
age—the last survivor in 1851—gained celebrity for their *Canterbury Tales*, which appeared in 1797.

Dr John Moore, born at Stirling 1729; some time a medical practitioner in Glasgow, and afterwards in London, was the author of *Zeluco*, and other fictions.—Died 1802. His eldest son was General Sir John Moore, who distinguished himself in the famous retreat in the Peninsula.

Charlotte Smith was the authoress of several popular novels, which appeared about 1790; one of her female contemporaries as a romance-writer was Mrs Ann Radcliffe, who produced her *Mysteries of Udolpho* in 1797.

Dr William Robertson (1721—1793), a minister of the Church of Scotland, was eminent as an historian; his works, which are written in a luminous and elegant style, are, *History of Scotland*, *History of the Reign of Charles V.*, *History of America*, and *Historical Disquisition on Ancient India*—all of which are now standard works in English literature.

Edward Gibbon (1737—1794), was a historian of great erudition and comprehensive and critical intellect. While residing at Lausanne, in Switzerland, in 1787, he completed his *History of the Decline and Fall of the Roman Empire*, a work involving immense research, and which places the author as the first of English historians; his style, however, though splendid, is not good, and his representation of ecclesiastical history must be received with caution. The work has been translated into almost every European language.



Edward Gibbon.

Dr William Paley (1743—1805), archdeacon of Carlisle, was eminent for his ethical and philosophical writings; his best known works are his *Elements of Moral and Political Philosophy*, published in 1785; his *Horæ Paulinæ* (1790); and his *Natural Theology*, 1802.

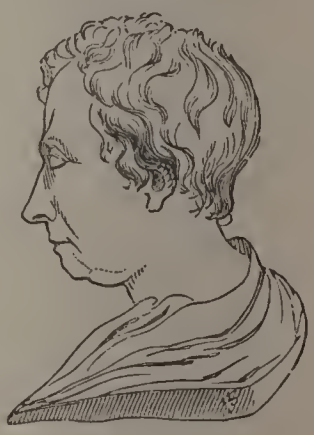
Dr Hugh Blair, one of the ministers of Edinburgh, author of *Sermons*, distinguished for their elegance of style (died 1800); Dr Samuel Horsley, bishop of St Asaph, critic and scholar, and author of various controversial disquisitions (died 1806); and Dr Richard Watson, bishop of Llandaff, author of *An Apology for the Bible* (died 1816); occupied a high rank among divines towards the conclusion of the 18th century.

William Wilberforce (1759—1833), eminent as a statesman, philanthropist, and writer on religious subjects; he is most prominent, however, for his extraordinary exertions in favour of the abolition of slavery within the British dominions, which he lived to see effected.

Edmund Burke (1730—1797), a native of Dublin, eminent as a philosophical and eloquent statesman, wrote several political and other treatises; his most famous work is his *Inquiry into the Origin of our Ideas of the Sublime and Beautiful*,[1] but his best is *Reflections on the French Revolution*.

Dr Adam Smith, born at Kirkcaldy 1723, was for some years Professor of Moral Philosophy in the university of Glasgow, where he wrote his *Theory of the Moral Sentiments*. Smith is best known by his *Wealth of Nations*, a work comprehending advanced views of political economy, which appeared in 1776, and remains the great text-book on the subject.

Dr Adam Ferguson (1724—1816), a native of Perthshire, eminent for his learning, was for some years Professor of Moral Philosophy in the University of Edinburgh. His chief works are the *History of Civil Society*, published in 1766; *Institutes of Moral Philosophy*, 1769; and *History of the Roman Republic*, 1783—this last the most valuable of all his writings.



Dr Adam Ferguson.

Mrs Hannah More (1745—1833), a pious and literary lady, wrote a number of religious and moral treatises, which appeared from 1782 to 1819, but her best known production is a novel, *Cœlebs in Search of a Wife*, 1809.

James Bruce of Kinnaird, a Scottish gentleman of ancient family and property, born 1730, wrote an account of his *Travels to discover the Sources of the Nile*, which appeared in 1790.—Died 1794.

Mungo Park, a native of Selkirkshire, born 1771, acquired celebrity from his *Travels in Africa*, which appeared 1799, and attained great popularity. This observant and enterprising traveller perished in a second African expedition, 1805.

William Cowper (1731—1800), an eminent poet, spent part of his life as a recluse at Olney, in Buckinghamshire; his chief poems are *Table Talk*, *The Progress of Error*, *The Task*,

[1] See *Historical Questions*, pages 128, 168.

and *Expostulation*, but he wrote a number of minor pieces, including *John Gilpin*. His works are mostly didactic, and bear evidence of a thoughtful mind and gentle spirit. Cowper forms a connecting-link between the 18th-century poets and those of later times.

43. *Who was David Garrick?*—He was a celebrated actor of the 18th century, born 1716. Garrick was great alike in comedy and tragedy, and was manager of Drury Lane Theatre for 29 years. He retired from the stage, 1776, and died 1779.

44. *Who were the Kembles?*—They were a remarkable family of actors subsequent to the age of Garrick. The most noted of the group was John Kemble (1757—1823), and his sister Sarah, who became Mrs Siddons (1755—1831), both eminent in representing the tragic characters of Shakspeare.

45. *What were the Ireland forgeries?*—They were forgeries of various documents alleged to be the writings of Shakspeare, executed by a youth, W. H. Ireland (1777—1834). For a time they imposed on the public; but the fraud was at length detected, and ultimately acknowledged, 1805.

46. *What Scottish poets appeared in the second half of the 18th century?*—There were ten or more, whose lyrics and other pieces enrich the National literature of Scotland. The more famed members of the group were as follows:

Lady Anne Lyndsay, who about 1771, wrote the ballad, *Auld Robin Gray;* by marriage, her name became Lady Anne Barnard.—Died 1825.

Miss Elliot and Mrs Cockburn, each the authoress of a version of *The Flowers of the Forest*—both versions are popular.

Robert Fergusson, born at Edinburgh 1750, attained celebrity as a Scottish poet of city-life, and died 1774.

Robert Burns.

Robert Burns, the greatest of the Scottish poets, son of a small farmer in Ayrshire, born January 25, 1759; his works were first issued in 1786, and at once stamped him as a poet of the highest order. His life was an almost continuous struggle with difficulties, and he died prematurely, July 21, 1796.

Alexander Wilson (1766—1813), a native of Paisley, author

of *Watty and Meg* and other poems, chiefly humorous. He emigrated to the United States, and there produced a meritorious work on *American Ornithology*.

Hector Macneill (1746—1818), author of the poem, *Scotland's Skaith, or the History of Will and Jean*, designed to picture the evils of intemperance. Macneill wrote also some popular lyrics.

47. *What was the 'Poetry of the Anti-Jacobin?'*—It consisted of clever poetical effusions contributed to the *Anti-Jacobin*, a weekly paper in London, 1797, which had been established to counteract the wild Jacobin sentiments propagated by the French revolutionists.

48. *Who were the chief writers in the Anti-Jacobin?*—The two most noted were William Gifford, who ultimately became editor of the *Quarterly Review* (died 1826); and George Canning, who attained celebrity as a statesman (died 1827).

49. *What is to be understood by the 'Scotch School' of Philosophy?*—That designation has been applied to a system of sober and rational inquiry into the faculties and modes of operation of the human mind, which originated in Scotland in the 18th century, in opposition to the scepticism of Hume.

50. *Mention some of the more noted Scottish philosophers.*—Dr Thomas Reid, author of an *Inquiry into the Human Mind* (died 1796); Dugald Stewart, author of *Outlines of Moral Philosophy* and other works (died 1828); Dr Thomas Brown (died 1820); and Sir William Hamilton (died 1856), whose profound philosophical works have lately been published.

51. *Mention some of the more eminent men of science in this era.*—John Hunter, eminent in surgical and anatomical science (died 1793); Edward Jenner, who attained universal celebrity as the discoverer of vaccination (died 1823); Joseph Black (died 1799), and Joseph Priestley (died 1804), both distinguished for their discoveries in chemistry and natural philosophy; James Watt, the great perfecter of the steam-engine (died 1819); Sir Joseph Banks, distinguished as a naturalist (died 1820); and Sir William Herschel, a native of Hanover, eminent for his astronomical discoveries (died 1822).

52. *What was the 'Huttonian Theory?'*—It was a theory propounded by James Hutton, an eminent geologist (died 1797), to the effect that certain beds and masses of rock took their form and character from fire, or had been produced by igneous agency.

53. *What was the 'Wernerian Theory?'*—It was to the effect that all rocks, including, of course, those referred to by Hutton, took their form and character from water, or were produced by aqueous agency. This theory was given to the world by Werner, an eminent German mineralogist. The Huttonian is sometimes called the 'Plutonic theory;' while the Wernerian is sometimes called the 'Neptunian theory.'

54. *What is now thought of these contending theories?*—Geologists are generally of opinion that the views of Werner, as far as the rocks referred to by Hutton are concerned, are wrong.

The Era of the Conclusion of the Reign of George III., and Reigns of George IV., William IV., and Victoria—1801 to 1865.

55. *When did Reviews begin?*—The earliest was the *Monthly Review*, begun 1749; and some others were commenced in the 18th century; but the first established of any note was the *Edinburgh Review*, which began in 1802.

56. *By whom was the Edinburgh Review begun?*—It was set on foot by a group of able young writers, of Whig principles, including Francis Jeffrey, Rev. Sydney Smith, Francis Horner, Henry Brougham, and some others.

57. *When was the Quarterly Review begun?*—It was commenced in 1809, by writers professing Tory or Conservative principles, and became the political opponent of the *Edinburgh*.

58. *Mention the more noted writers from the beginning of the 19th century—*

Rev. George Crabbe, born in Suffolk 1754, author of *The Village*, *Parish Register*, *The Borough*, *Tales of the Hall*, and other poems, published between 1781 and 1818. Crabbe has been called 'the poet of the poor,' for many of his simple and pathetic descriptions refer to humble life in rural districts. —Died 1832.

Jeremy Bentham (1748—1832), was an eminent writer on Political Economy and Jurisprudence; he adopted as his standard principle in social questions, 'the greatest happiness of the greatest number'—a phrase often since quoted.

Samuel Rogers, son of a banker in London, born 1763, was the author of various poems which were issued only after long and patient study. Rogers was essentially the poet of taste. His principal poems are *Pleasures of Memory*,

Human Life, and *Italy*. After being a noted man of letters for the greater part of a century, he died 1855.

William Wordsworth, born in Cumberland 1770, author of *The Excursion*, a philosophical poem in blank verse; *The White Doe of Rylstone*, *Sonnets on the River Duddon*, and numerous minor poems, abounding in pathos, grace of imagery, and subtle beauty of language. His noble sonnets have rarely, if ever, been surpassed. The term 'Lake School,' applied to Wordsworth and his personal friends and brother-poets, Coleridge and Southey, has little or no meaning, and is now falling into disuse.—Died 1850.

William Wordsworth.

Samuel Taylor Coleridge, born in Devonshire 1772, a profound thinker and imaginative poet, wrote numerous poems, of which the three most appreciated are *Christabel*, *Genevieve*, and *The Ancient Mariner*.—Died 1834.

Robert Southey, born at Bristol 1774, was noted not only as a poet, but as a biographer, antiquary, critic, and historian. While young, he wrote a poem, *Wat Tyler*, which he afterwards withdrew; his later and best known poems are *Thalaba*, *The Curse of Kehama*, and *Roderick, the Last of the Goths*. His most popular prose works are the *Life of Nelson*, and *Life of John Wesley;* he wrote numerous articles in the *Quarterly Review*, and was the author altogether of above 100 volumes. Southey was appointed poet-laureate in 1813.—Died 1843.

Charles Lamb, born in London 1775, poet and essayist, was remarkable for his humour and kindliness of feeling. His poems are now little heard of, and his fame rests chiefly on his essays, which were contributed to the *London Magazine* under the signature of *Elia*. By this assumed designation, Lamb is best known in literature.—Died 1834.

Thomas Moore, born in Dublin 1779, became distinguished for his sentimental lyrics and his poetical satires. The more conspicuous of his political satires were his *Twopenny Post-bag* and *The Fudge Family in Paris;* but these and all his other poetical effusions have been obscured by the brilliancy of his *Irish Melodies*, and his *Lalla Rookh*, both alike imperishable. —Died 1852.

Thomas Campbell, born in Glasgow 1777, and for a time a tutor in the island of Mull, was the author of the *Pleasures of Hope*, which appeared in 1799, and at once placed its youthful

author in the first rank of poets. Campbell afterwards wrote *Gertrude of Wyoming*, and other poems; also several songs, two of which, *The Exile of Erin*, and *Ye Mariners of England*, will ever remain popular.—Died 1844.

Walter Scott, born in Edinburgh 1771, was eminent as a poet, but more so as a novelist. He began his literary career as an editor of old ballads, a collection of which, with some modern imitations, was published under the title of *Minstrelsy of the Scottish Border*. His first poem, *The Lay of the Last Minstrel*, appeared in 1802, and was succeeded by *Marmion*, *The Lady of the Lake*, and *The Lord of the Isles;* these, and most of his other poems, were exceedingly fluent and descriptive, and marked by strong national feeling. *Waverley*, the first of his celebrated novels, appeared in 1814. He was created a baronet by George IV. Scott died at Abbotsford, his favourite country residence on the Tweed, 1832.

George Gordon Byron, Lord Byron, born in London 1788, was one of the most eminent English poets of this era. His first volume of poetry, entitled *Hours of Idleness*, appeared in 1807, and on its being reviewed unfavourably by the *Edinburgh Review*, he was provoked to write a severe satire, *English Bards and Scotch Reviewers*. In 1812 appeared the first part of his *Childe Harold*, and afterwards he produced in quick succession *The Giaour*, *Bride of Abydos*, *Corsair*, *Lara*, *Siege of Corinth*, *Prisoner of Chillon*, and other poems. Byron excelled in painting strong and gloomy passions, and no poet in modern times has so effectually stirred the depths of the human heart. His great work is *Childe Harold*, a noble poem in the Spenserian stanza. —Died in Greece 1824.

Byron.

William Hazlitt was a miscellaneous writer, whose criticisms on poetry, the drama, and the fine arts, and also his essays, shew a bold and vigorous mind; his sparkling and pungent style is particularly fascinating.—Died 1830.

Rev. Sydney Smith, a clergyman of the Church of England, born 1771, began his literary career as one of the originators of the *Edinburgh Review*. He produced a number of works of passing interest, poetical and satirical, all in the cause of social amelioration, and marked by a fine genial spirit. He died 1845, and an amusing memoir

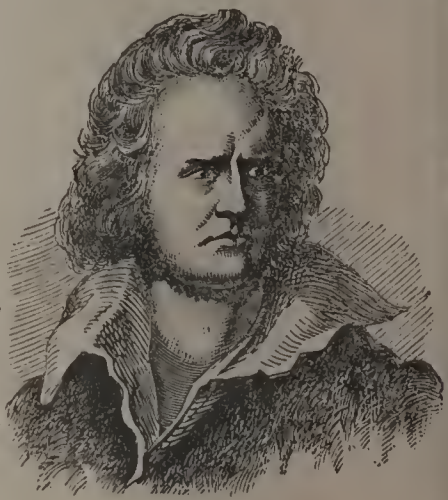
of his life has been given to the world by his daughter, Lady Holland.

59. *Mention some noted poets contemporary with, or successors to, Scott and Byron.*—Percy Bysshe Shelley (drowned 1822); James-Henry Leigh Hunt, ordinarily called Leigh Hunt, who was eminent as an essayist as well as a poet (died 1859); John Keats (died 1821); James Montgomery, religious poet (died 1854); and Thomas Hood, eminent for his humorous and pathetic poetry (died 1845).

60. *Mention some of the minor but popular poets of this era.*—Henry Kirke White (died 1806); John Leyden (died 1811); Rev. James Grahame (died 1811); John Clare, known as the 'Northamptonshire Peasant' (died 1864); James and Horace Smith, authors of the *Rejected Addresses;* and Mrs Hemans (died 1835).

61. *Mention some poets in the early part of the 19th century who used the Scottish dialect.*—James Hogg, known as the 'Ettrick Shepherd,' author of *The Queen's Wake*, and the greatest Scottish poet after Burns (died 1835); Robert Tannahill, author of several fine lyrics (died 1810); and Allan Cunningham, ballad and song writer (died 1842). Those of less note were James Mayne, William Tennant, and Sir Alexander Boswell. Latterly, some beautiful and popular Scottish lyrics have been written by James Ballantine, Edinburgh.

62. *Who was John Wilson?*—He was a poet, novelist, and miscellaneous writer, born at Paisley 1785; but though a Scotsman by birth, his writings belong to English literature. He was a noted contributor to *Blackwood's Magazine*, in which he was known as 'Christopher North.' Wilson was some years Professor of Moral Philosophy in the University of Edinburgh.—Died 1854.



John Wilson.

63. *Mention some eminent novelists of this era.*—Besides Scott and Wilson, the list of novelists includes J. G. Lockhart, John Galt, Theodore Hook, Samuel Lover, C. J. Lever, John Banim, William Carleton, W. H. Ainsworth, G. P. R. James, Anthony Trollope, and Benjamin Disraeli—this last writer being also a statesman distinguished for his eloquence. There has been likewise a number of female novelists.

64. *Mention the more eminent of these female novelists.*—Mrs Opie, Lady Morgan (originally Miss Owenson), Miss Austen, Mrs Brunton, Miss Mitford, Miss Ferrier, Mrs S. C. Hall, Mrs Trollope, Miss Brontë (better known by her pseudonym of Currer Bell), Miss Evans (who writes under the name of George Eliot), Mrs Henry Wood, and Miss Mulock. But this list could be greatly enlarged.

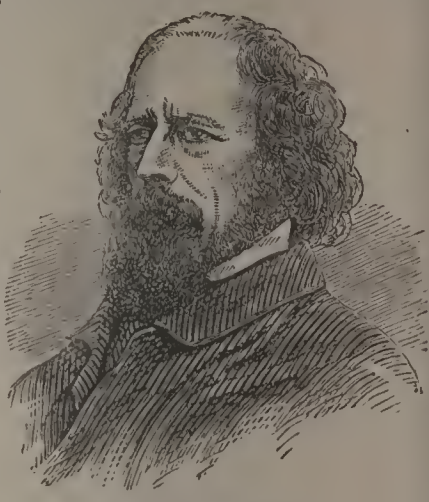
65. *Mention four celebrated writers of fiction of our own times.*—W. M. Thackeray, deceased; Douglas Jerrold, deceased; Charles Dickens, and Sir Edward Bulwer Lytton.

66. *Mention four eminent historians of our own times.*—Lord Macaulay (died 1859), author of *The History of England, from the Accession of James II.;* J. A. Froude, author of *The History of England from the Fall of Wolsey to the Death of Elizabeth*, a work, the first part of which was written to vindicate the character of Henry VIII.; George Grote, author of *The History of Greece*, a work of great erudition; and Sir Archibald Alison, author of *The History of Europe from the Commencement of the French Revolution to the Restoration of the Bourbons.*

67. *Mention some distinguished scientific writers in the present century.*—Sir Humphry Davy, noted for his discoveries in chemistry (died 1829); John Dalton, also eminent for chemical discoveries, particularly as concerns gases (died 1844); Sir Charles Lyell and Sir Roderick Impey Murchison, eminent geologists; Sir David Brewster, eminent for his discoveries in natural philosophy; Hugh Miller, a popular illustrator of geology (died 1856); Richard Owen, eminent for his expositions of natural history and physiology; and Sir John Herschel, eminent for his astronomical speculations, and his brilliant success in diffusing a knowledge of his favourite science.

68. *Mention some noted miscellaneous writers in our own times.*—Thomas De Quincey, an essayist distinguished for subtlety of fancy and intellect (deceased); John Ramsay M'Culloch, writer on political economy (deceased); Rev. Dr Thomas Chalmers, author of various theological works (died 1847); Thomas Carlyle, author of the *History of Frederick the Great*, and numerous other works of an historical and politico-moral kind; John Stuart Mill, author of works on logic and political economy; Henry Lord Brougham (born 1778), writer of a vast variety of works, including *Memoirs of the Statesmen of the Reign of George III.;* John Lord Campbell (deceased), author of *Lives of the Chancellors;* and John Earl Russell, author of several works in miscellaneous literature, and distinguished as a statesman.

69. *Mention an English eminent poet in the reign of Victoria.*—Alfred Tennyson, born 1810, author of *In Memoriam, Idylls of the King*, and numerous other poems. Mr Tennyson holds the office of poet-laureate, which was previously held by Wordsworth.



Alfred Tennyson.

70. *What is the office of poet-laureate?*—It is an office in the gift of the sovereign, which originated about the reign of Edward IV. Until recent times, the duty of the laureate was to write an ode on the birthday of the sovereign, and sometimes on the occasion of a national victory. The office is now honorary, with emoluments amounting to £127 annually.

71. *What is the 'Harleian Collection?'*—It is a collection of valuable manuscripts in the British Museum, purchased by parliament in the reign of George IV. The collection was formed by Robert Harley, Earl of Oxford, an eminent statesman and great patron of literature, who died 1724.

72. *When was the Society for the Diffusion of Useful Knowledge established?*—It was established in 1825, and in 1827 it commenced to issue treatises, the first of which was written by Lord Brougham. The society existed only a few years, but was of great service in promoting a popular taste for literature.

73. *When did cheap literature of the kind now prevalent begin?*—It began in 1832, in the reign of William IV. One of the most eminent pioneers of this species of popular literature was Charles Knight, London.

74. *Mention a remarkable change that has taken place in literature.*—The decline of dramatic and poetic literature, and a corresponding increase in the number of novels, written less to depict real life than to excite and startle—ordinarily called 'sensational novels;' such a marked change being coincident with alterations in public taste.

75. *What is 'copyright?'*—It is a right of property possessed by authors in the works they compose, which right they can sell or assign. In the United Kingdom, the right, with some qualifications, is valid for 42 years, or during the lifetime of the author. The law of copyright dates only from the reign of Queen Anne.

76. *What is 'liberty of the press?'*—It is the printing and vending of books, newspapers, and other kinds of literature without interruption from any public authority. This freedom prevails in its fullest extent in the United Kingdom, the only statutory restriction imposed being on the issue of works of an immoral tendency.

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77. *Has literature been successfully cultivated in the United States of America?*—Yes; but only in recent times, when there have been numerous writers, whose works exhibit the same characteristics as those of their English contemporaries.

78. *Mention some of the earlier American writers.*

Benjamin Franklin, man of science and statesman, who, besides *Essays* and miscellaneous papers, wrote his *Autobiography*, an amusing work which details his youthful struggles as a printer.—Died 1790.

Jonathan Edwards, died 1758, and Timothy Dwight, died 1830; both eminent for their theological writings.

Charles Brockdon Brown, celebrated for his novels—*Arthur Mervyn* and others—which appeared from 1798 to 1804.—Died 1809.

79. *Mention some more recent American writers.*

George Bancroft (born 1800), eminent for his *History of America* and other works.

Washington Irving, historical and miscellaneous writer, but best known as author of the *Sketch-Book* (died 1859).

W. H. Prescott, author of *The History of Ferdinand and Isabella*, and other works (died 1859).

Ralph W. Emerson, a very subtle metaphysician of the transcendental school.

James Russell Lowell, author of the *Biglow Papers*.

J. K. Paulding (died 1860), Edgar Allan Poe (died 1849), and W. C. Bryant, poets.

Dr Noah Webster (died 1843), celebrated for his *Dictionary of the English Language*.

Nathaniel Hawthorne (deceased), J. F. Cooper (died 1851), and Mrs Harriet Beecher Stowe, novelists.

The most popular of living American poets is Henry Wadsworth Longfellow, author of *Evangeline*, the *Song of Hiawatha*, and other poems.[1]

[1] For full information concerning English Literature, students may consult the *Cyclopædia of English Literature*, edited by Robert Chambers, LL.D., 2 vols. 8vo.

The Fine Arts.

1. *What are the Fine Arts?*—They include Painting, Sculpture, Architecture, Music, and other branches of art of a refined or ornamental nature.

Painting.

2. *In what does Painting consist?*—It consists in the representation of natural and artificial objects by means of colours on walls, canvas, paper, and other flat surfaces.

3. *Mention some of the leading departments in the art of painting.*—Historical painting, landscape painting, marine painting, portrait painting, animal painting, and the painting of droll scenes and familiar objects. Historical painting, which embraces subjects in scripture and civil history, is considered to be the highest department in the art.

4. *Is the art of painting of ancient date?*—Yes; it was practised in Egypt at a very remote period, and in ancient Greece, and in Rome.

5. *Who was Apelles?*—He was the most renowned of the Grecian painters, and flourished between 336 and 306 B.C. For some years he practised his art at the court of Philip of Macedon, and executed a picture of Alexander the Great. The finest of Apelles's paintings was his *Venus rising from the Sea*, with a shower of silver drops falling round her like a veil of gauze.

6. *What is Perspective?*—It is the science which teaches the art of depicting and placing objects in the manner in which they appear to the eye in nature—the parts which are near being larger than those at a distance, according to certain rules and proportions.

7. *What are Pigments?*—They are the colouring substances employed by painters, and usually consist of chemical and mechanical preparations of metals united with oil—the result being what is termed 'oil painting,' as distinguished from painting with water-colours or with size.

8. *Who were the Byzantine artists?*—They were artists of Byzantium or Constantinople, by whom the art of painting was preserved during the middle ages, and communicated by

them to Italy, Germany, and other countries early in the 13th century.

9. *From whom did the Byzantine artists and their successors receive encouragement in Italy and elsewhere?*—They received encouragement from successive popes and wealthy ecclesiastics, who employed them to decorate places of public worship with subjects from sacred history.

10. *Mention two of the noted early Italian painters.*—Cimabue, who flourished about 1270, and Giotto, about 1300; but there were several others.

11. *What is meant by schools of painting?*—By 'schools' is signified styles of treating subjects which have been adopted in different cities and countries. Thus, there are the Roman, Florentine, Bolognese, and Venetian, which constitute the Italian schools; also the French, Spanish, Flemish, Dutch, and English schools.

12. *Mention the three greatest painters of the Italian schools.*—Leonardo da Vinci, Michael Angelo, and Raphael, all of whom flourished at the beginning of the 16th century, and gave a new character to art.

13. *What was the most celebrated work of Leonardo da Vinci?*—The *Last Supper*, a painting executed on an inner wall in a monastery at Milan about the year 1500; this great work, which has been often copied in engravings, is now in a very decayed condition.

Raphael.

14. *Who was Raphael?*—He was the greatest of the Italian painters. His proper name was Raffaelle Sanzio of Urbino; he was born in 1483, and died when 37 years of age, 1520. His instructor was Perugino, a famed Italian artist. During his short career, Raphael rose to the highest fame as an artist, and he stands at the head of the Roman school. His chaste nobleness of design, simplicity and beauty of proportion, and truth to nature, are his leading characteristics. His greatest picture is the *Transfiguration*, in the Vatican at Rome. He is called by the Italians the 'Divine Raphael.'

15. *What are the Cartoons of Raphael?*—They are paintings in water-colours on stout paper, representing subjects from

the New Testament, designed as patterns for tapestry; seven of these were purchased by Charles I., and were placed in Hampton Court.

16. *State some particulars concerning Michael Angelo.*—His name, in full, was Michael Angelo Buonarotti; he was born in Tuscany, 1474. Although placed at the head of the Florentine school, his great works were executed in Rome—his most famous production being the *Last Judgment*, which is painted on the ceiling and end wall of the Sistine chapel, and is remarkable for its representation of the grand and the terrible. Michael Angelo, who was great in sculpture and architecture, as well as in painting, died 1563.

17. *Who was Correggio?*—He was the founder of the school of Parma or Lombardy, which had for its chief characteristics a harmony of colours and a powerful contrast of light and shade. Correggio died 1534. His most famous picture, called *La Notte* (The Night), is in the collection at Dresden; it represents the Virgin bending over the infant Jesus, from whom streams a celestial light, which irradiates surrounding objects—a marvellous triumph of art.

18. *Who was Titian?*—He was a very eminent painter of the Venetian school, born about 1480, and a contemporary of Correggio. The most celebrated of Titian's pictures is the *Assumption of the Virgin*, which he painted for an altar-piece in 1516; it is considered to be one of the finest pictures in the world. Titian died 1576, and was succeeded in the Venetian school by Tintoretto and Paul Veronese.

19. *Who was Canaletto?*—He was a later painter of the Venetian school, who died in London, 1768. His pictures, which are exceedingly fine, represent architectural subjects, chiefly the palaces of Venice.

20. *Who were the Caraccis?*—They were three noted painters, founders of the Bolognese school, kinsmen and fellow-labourers, who flourished about 1600. Some of the finest works of Annibal Caracci are in Bologna. The Caraccis were followed by Domenichino (died 1641), and Guido Reni, both of whom have left grand pictures on sacred subjects.

21. *Who was Albert Dürer?*—He has been styled the father of the German school of painting, and prince of artists. He was born at Nürnberg, 1471, and distinguished himself in youth by his exquisite carving; he subsequently adopted painting as his profession. He excelled in originality and accuracy of design. Albert Dürer died 1528.

22. *Who was Holbein?*—Hans Holbein was a painter of the German school, a contemporary of Albert Dürer; removing to England, he executed several portraits of Henry VIII.; born 1498; died 1554.

23. *Who was Salvator Rosa?*—He was an Italian artist of extraordinary genius—painter, poet, musician, and actor—born 1615; he practised painting at Rome, where he was at the height of his reputation in 1639. His favourite landscapes are gloomy and romantic solitudes, which are painted with great force of imagination.—Died 1673.

24. *Who was Claude Lorraine?*—He was a great landscape painter; his proper name was Claude Gelée, and he had the name Lorraine from being born in that province of France, 1600. Claude practised his art at Rome, and became remarkable for his exquisite representation of rural scenery.—Died 1682.

Claude Lorraine.

25. *Mention two leading masters of the French school.*—Nicholas Poussin (died 1665), and Charles Le Brun (died 1690). Poussin was celebrated for his landscapes, with scriptural and classic figures, which possess a certain poetic feeling. Le Brun, who was of Scottish extraction, executed various historical paintings for Louis XIV.

26. *Who were the Vernets?*—There have been three notable French painters of that name—father, son, and grandson. The first, Claude Joseph Vernet, born at Avignon, 1714, was renowned for his sea-pieces, with shipping, which are well known from engravings. The second, Carle Vernet, born 1758, was equally celebrated for his battle-pieces. The third, Horace Vernet, born 1789, attained distinction for his gigantic pictures representing events in recent French history, which embellish the walls of the royal palaces.

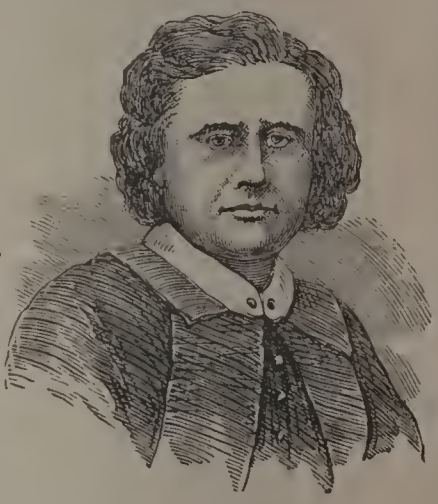
27. *Who was Watteau?*—He was a French painter, born 1684, whose style of art is very peculiar. Watteau's pictures represent rural fêtes, with fancifully-dressed shepherds and shepherdesses—a species of Arcadian poetry on canvas; died 1721. A scene with people of fashion scattered theatrically about among trees, is said to be 'after Watteau.'

28. *Who was Greuze?*—He was a celebrated French painter,

born 1726, who carried art forward to the 19th century. Greuze excelled in exciting and pathetic scenes—his series of pictures depicting the history of a prodigal son, in the Gallery of the Louvre, being perhaps the best known. He has been styled the 'French Hogarth.'—Died 1805.

29. *Who was David?*—He was a French painter, greatly encouraged by Napoleon I., and gained celebrity as the founder of a French classical style, which is now, however, regarded as too formal.—Died 1825. Latterly, Paul de la Roche has occupied a high place in the French school of historical painting.

30. *Who is Rosa Bonheur?*—She is a French lady, born at Bordeaux, 1822, who has gained celebrity as an animal painter. Her pictures are remarkable for their beauty, vigour, and fidelity to nature.



Rosa Bonheur.

31. *Who was Rubens?*—Peter Paul Rubens, born 1577, stands at the head of the Flemish school of painters. He excelled in colouring and boldness of execution; all his figures being remarkable for strong physical development. The grandest pictures of Rubens represent Scripture subjects, one of the best known of which is the *Descent from the Cross*, in the cathedral at Antwerp.—Died 1640.

32. *Who are the other noted painters of the Flemish school?*—Anthony Van Dyck, died in England, 1641; David Teniers the Younger, celebrated for vivid transparent effects—died 1694; and Snyders, noted for hunting scenes—died 1657.

33. *Who was Rembrandt?*—Rembrandt was a painter admitted to be the head of the Dutch school, born 1606. His pictures are noted for originality of design, and a rich golden tone of colouring.—Died 1669.

34. *Who was Paul Potter?*—He was an eminent painter of the Dutch school, born 1625. His grandest and best known piece is his *Bull*, now in a national collection at the Hague, which is visited by innumerable tourists for the pleasure of seeing this single picture.—Died 1654.

35. *Mention some other distinguished painters of the Dutch school.*—Cuyp, Terburgh, Ostade, Hobbima, Karl du Jarden, Jan Steen, Van de Velde, Ruisdaal, Gerard Douw, Berghem, and Wouvermans—all of whom flourished in the 17th century.

36. *What is a general characteristic of the Dutch school?*—Many of the pictures, particularly those of Ostade and the elder Teniers, represent scenes of low humour; others have a higher aim. Ruisdaal is celebrated for his dashing water-falls, and Berghem and Wouverman for their beautiful small pictures representing subjects with animals.

37. *Mention two great masters in the Spanish school.*—Velasquez, who died 1660; and Murillo, who died 1682. Murillo is by far the most eminent Spanish painter, and his works are numerous and highly prized. He is well known for pictures of beggar-boys, also for his sacred subjects, particularly the *Virgin and Child*, in which he excels.

38. *Who was Spagnoletto?*—He was a native of Spain, named Ribera, but proceeding, while young, to Italy, he was there called Spagnoletto or the little Spaniard, by which he became known in art. He excels as a painter of gloomy and ghastly subjects, such as martyrdoms and heads of aged and dying monks, all strikingly faithful to nature.—Died 1656.

39. *When did painting rise to eminence in England?*—Not till the 18th century; but previously, through the encouragement given to the fine arts by Charles I., a class of native painters had begun to rise up.

40. *Who was Sir Peter Lely?*—He was a native of Westphalia, born 1617 or 1618, who came to England, and was appointed state-painter by Charles II., who had known him in Holland. Lely is best known for his charmingly executed portraits of the beauties of the court of Charles II.—Died 1680.

William Hogarth.

41. *Who was Hogarth?*—William Hogarth, born 1697, was the first distinguished English painter, and with him the English school commenced; he was at the height of his fame in 1745. Hogarth's chief pictures were moral and satiric; those best known being the *March to Finchley*, *Marriage à la Mode*, and the *Rake's Progress*. These, and his other pictures, all highly esteemed, have been often engraved. —Died 1764.

42. *Who was Sir Joshua Reynolds?*—He was the greatest of English portrait-painters, born 1723. He excelled in style and colouring—his pictures being soft and delicate in tone,

with a high intellectual quality. He was the first President of the Royal Academy, founded 1768, and delivered *Discourses on Painting*, which, often printed, form a valuable manual for young and aspiring artists.—Died 1792.

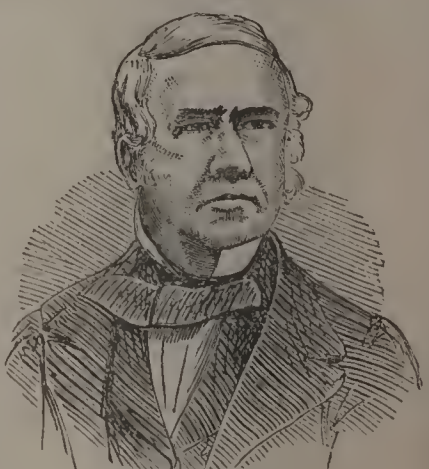
43. *Mention some noted English painters contemporary with Reynolds.*—Gainsborough, a painter of portraits, also of cottage-doors and other rural scenes—died 1788; Benjamin West, a historical painter—died 1820; and John Opie—died 1807. One of the greatest of Reynolds's successors in portrait painting was Sir Thomas Lawrence (1769—1830).

44. *Who are the Landseers?*—They are a family of artists—the father, John Landseer, an engraver (died in his 83d year, 1852), and three sons; Thomas, engraver; Charles, a painter; and Sir Edwin, celebrated for his numerous fine paintings of deer and other animals.

45. *Mention some other noted English painters of the present day.*—Turner, famed for landscapes (deceased); Stanfield, celebrated for sea-pieces; Ward, eminent as a historical painter; Mulready, famed for his pictures representing domestic and familiar subjects; Frith, noted for his success in pieces representing a multitude of figures; and Cooper, painter of cattle-pieces, &c.

46. *Who was the earliest Scottish painter?*—The first native painter in Scotland was George Jamesone, born in Aberdeen about 1586; after studying under Rubens at Antwerp, he attained eminence as a portrait painter in his native country. Died at Edinburgh, 1644.

47. *When did a school of painters arise in Scotland?*—In the 18th century, through the instructions given by an institution called the 'Board of Trustees,' established to encourage different departments of art. Latterly, the fine arts in Scotland have been promoted by the *Royal Scottish Academy*.



David Roberts.

48. *Mention some distinguished Scottish painters.*—Alexander Nasmyth (1758—1840), a distinguished landscape painter; Sir David Wilkie (1785—1841), inimitable in his domestic scenes; Sir Henry Raeburn (1756—1823), a portrait painter, whose works are remarkable for their delicacy and richness of colour; Rev. John Thomson (1778—1840), landscape painter; and David Roberts (1796—1864), celebrated

for his grand architectural pieces; for most part of his life, however, Roberts pursued his profession in London. Besides these, Scotland has lately produced a host of painters—John Phillip, Thomas Faed, Horatio MacCulloch, Noel Paton, George Harvey, &c.—well known in the higher branches of art.

49. *What are 'gallery pictures?'*—They are paintings of a large size, adapted for public galleries, and are so called to distinguish them from 'cabinet pictures,' or those of a small size suited for ordinary apartments.

50. *What is meant by 'kit-cat' pictures?*—The term *kit-cat* is applied to portraits on canvas measuring about 23 inches broad by 36 inches in depth; it originated in the fact of Sir Godfrey Kneller, a painter in the early part of the 18th century, having executed portraits that size of members of the Kit-cat Club. This club took its name from Kit (or Christopher) Cat, in whose tavern it held its meetings.

51. *What are 'genre' pictures?*—The French word *genre* signifies 'kind,' and is employed to designate pictures of some special variety. The best known *genre* pictures are those with figures having a certain moral aim—pictures, in fact, which tell a story, but do not attain the character of being historical. For example, the chief productions of Hogarth, Greuze, Wilkie, and Mulready are *genre* pictures.

52. *What are 'Pre-Raphaelite' pictures?*—They are pictures by certain painters who believe that they adhere to the principles which they conceive to have guided the art that prevailed previous to Raphael. Such pictures are usually characterised by considerable attention to minutiæ.

53. *What is meant by the 'aureola' in art?*—The *aureola* is a halo of light or glory depicted around divine persons; the term is from *aurum*, Latin for gold. When the aureola is limited to the head, it is styled a *nimbus*, Latin for a cloud. The nimbus is sometimes in the form of a ring. These symbols were originally pagan, and introduced into Christian art by the Byzantine painters.

54. *What is 'Fresco' painting?*—The Italian word *fresco* signifies 'fresh or cool,' and is applied to painting on freshly-laid plaster. The painting is in water-colours, which become incorporated with the moist plaster, and produce a vivid and permanent effect. Fresco painting has lately been adopted with success by W. Dyce (deceased), Maclise, and Herbert, in adorning the Houses of Parliament, Westminster, with subjects of historical interest.

55. *What is 'Photography?'*—It is a process of recent origin

(in which the sun's light and certain chemicals are employed), for the purpose of producing pictorial representations, chiefly small likenesses. The term is from the Greek *phos*, light, and *grapho*, I write. To M. Daguerre, a French painter (died 1851), the honour is chiefly due of having been concerned in bringing the process into practical use about 1839.

56. *What is the date of the oldest painted glass-windows in Europe?*—The oldest existing coloured glass-windows are found in certain churches in Germany and France, and date from the 10th to the 12th centuries. Some in England are as old as the 14th century. The art of staining glass for church windows has lately undergone great improvement as respects colour, drawing, and mechanical details.

Sculpture, &c.

57. *What are the Plastic arts?*—The term *plastic* is from a Greek word signifying 'to form,' and is applied to sculpture, pottery, and other arts by which rude masses of matter are fashioned into shape.

58. *In what manner is sculpture practised?*—Its higher department consists in carving marble or some other kind of stone into forms imitative of the human figure. Usually, as a guide, the artist first forms a model in clay of the required figure, and copies it with his chisel.

59. *Is sculpture an ancient art?*—Yes; it was practised in ancient times by the Assyrians, Egyptians, Etrurians, Greeks, and Romans, specimens of whose sculptures are preserved in museums.

60. *By whom was sculpture carried to a high degree of perfection?*—By the Greeks, who are admitted to have excelled all other nations in ancient and modern times.

61. *To what special circumstance has the superiority of Greek sculpture been ascribed?*—It is thought to have been greatly promoted by the frequent public exercises and games, which were calculated to develop the best proportions in the human form; also to a high sentiment of veneration for the gods, and the wish to represent them in the highest style of art—hence the elegant sculptures of gods and goddesses in marble, to place in groves and temples.

62. *What is the 'ideal' in art?*—The 'ideal' is that perfection which exists only in the imagination. The ordinary human figure being more or less imperfect, sculptors, in forming figures of gods or goddesses, endeavoured to avoid

every mortal blemish, and to give expression to the highest conceptions of grace and dignity.

63. *Has the 'ideal' of beauty, then, no actual counterpart in nature?*—It has not; and yet, by its harmony and chasteness of design, it pleases the eye, and excites agreeable emotions. The ideal is therefore the poetry of art, and it was in this lofty quality that the Greek sculptors had no rivals.

64. *When did Greek sculpture attain a perfect condition?*—In the time of Pericles, a ruler of Athens, and great patron of art, about 440 B.C. He employed Phidias to embellish Athens; and in the works of that artist sculpture attained to the sublime in execution. Phidias has been called the 'sculptor of the gods.'

65. *What were the grandest works of Phidias?*—The Olympian Zeus or Jupiter, at Elis; and the Athene or Minerva, in the Parthenon at Athens. The nude parts of both figures were in ivory, the draperies of solid gold, and the eyes were precious stones. These figures are believed to have been the grandest ever produced by the art of sculpture. Phidias died about 432 B.C.

66. *What is sculpture in 'bas-relief?'*—It is sculpture raised in relief to a moderate degree on a flat surface; when the sculpture is raised so as to project boldly it is called *alto-relievo* (Italian for 'high-relief'). Sculpture in alto-relievo was brought to perfection by Phidias.

Portion of Elgin Marbles.

67. *What are the Elgin Marbles?*—They are a collection of ancient sculptures, chiefly from the Acropolis at Athens,

where, about 1801, they were obtained at great cost and trouble by Thomas, seventh Earl of Elgin, and transferred to England. They were purchased by government in 1816, and are now in the British Museum.

68. *Describe the Elgin marbles.*—Those most appreciated are slabs of marble with figures in relief, which constituted the frieze of the cella of the Parthenon, and fifteen of the metopes representing the battle of the Centaurs and Lapithæ. The figures, mostly equestrian, represent a grand festive procession in honour of Minerva, which took place once in five years. This series of sculptures was executed by Phidias, and by others under his direction. Casts of the marbles are well known to students of art.

69. *What is the Apollo Belvidere?*—It is a celebrated Greek statue of Apollo, which, after being lost for ages, was discovered in 1503 ; it takes its present name from being placed in the Belvidere Gallery of the Vatican. The figure, upwards of 7 feet in height, is regarded as embodying the highest ideal of manly beauty.

70. *What is the Venus de' Medici?*—It is a statue of Venus, executed by an unknown Greek sculptor, which was found in the ruins of Hadrian's villa at Tivoli, and after being placed in the gardens of the Medici at Rome, was transferred to a collection of sculpture at Florence, 1695. The figure is small —only about 4 feet 11 inches high ; but it is greatly prized as an ideal of female beauty.

71. *Mention other two celebrated Greek sculptures.*—The *Laocoon*, in the Vatican, and the *Dying Gladiator*, in the museum of the capitol at Rome.

72. *Who was Praxiteles?*—He was an eminent Greek sculptor, who flourished about 360 B.C. Under him and his contemporary Lysippus, sculpture was in its highest perfection in point of execution, but their conceptions were less chaste and noble than those of Phidias.

73. *What was the character of Roman sculpture?*—It was much inferior to that of Greece ; but it was cultivated to some extent under Augustus and immediately succeeding emperors. Many of the finest sculptures of Greece were brought to Rome, where a number have been excavated from ruins.

74. *When did sculpture revive in Italy?*—It experienced a revival at the beginning of the 15th century, when a number of artists arose. One of these was Lorenzo Ghiberti, a Florentine, who flourished between 1420 and 1450.

75. *Mention a great work of Ghiberti.*—Two of the large bronze doors of the Baptistery in the cathedral at Florence. Each door is in two leaves—the whole divided into square panels, embellished with scriptural subjects in relief. The execution of the first door occupied twenty-three years. Casts of these 'Ghiberti gates,' as they are called, are in the Crystal Palace at Sydenham.

76. *Who was Benvenuto Cellini?*—He was an eminent Italian sculptor, born at Florence 1500; he was particularly celebrated for his skill in embossing shields with classic figures. —Died 1570.

77. *Who was Canova?*—Antonio Canova was a recent Italian sculptor, born 1757, and noted for his many fine figures in the ancient Greek style. He practised his art at Rome.—Died 1822.

78. *Who was Flaxman?*—John Flaxman was an English sculptor of eminence, born at York 1755. He pursued his profession in London, where, as Professor of Sculpture to the Royal Academy, he delivered a series of valuable lectures on art.—Died 1826.

79. *Who was Thorwaldsen?*—Bertel (or Albert) Thorwaldsen was an eminent Danish sculptor, born at Copenhagen, 1770. His principal works were executed in Rome. The best known of his productions is a magnificent frieze of great length, representing the *Triumphant Entry of Alexander*

Portion of Triumphant Entry of Alexander into Babylon.

into Babylon, executed to the order of Napoleon 1812, as a decoration for an imperial residence at Rome.—Died 1843.

80. *What is the Ceramic art?*—It is the department of the plastic arts which is concerned with fashioning objects in clay

—the art of the potter ; the term ceramic is from the Greek word *keramos,* 'potter's clay.'

81. *By whom was the ceramic art highly cultivated in ancient times?*—The art was brought to great perfection by the Etruscans or Tusci, an ingenious people who inhabited Etruria, or the part of Italy now called Tuscany. The Etruscans were at the height of artistic glory about 700 B. C., when the Roman nation was only beginning.

82. *What is Majolica?*—It is a term applied to a certain kind of pottery, coarse, but highly coloured and glazed, which was introduced into Italy from Majorca about the 12th century, and was the manufacture of the Moors.

83. *When was the ceramic art revived in Italy?*—It was revived from about 1520 to 1560, chiefly by adopting the classical figures of Raphael, Julio Romano, and other eminent artists. Italian pottery of this period is now highly valued.

84. *Who was Palissy?*—Bernard Palissy was a French potter, born about 1510, who became famous for his glass paintings and beautifully-figured pottery. For a time, he carried on his art under royal protection at the Tuileries, where some of his furnaces have lately been discovered.—Died 1590.

85. *What is the Portland vase?*—It is an ancient cinerary urn, of transparent dark-blue glass, which was found near Rome about the middle of the 16th century; it was at first deposited in the Barberini Palace, but was subsequently transferred to England in 1770, and was purchased by the Duchess of Portland for eighteen hundred guineas. Hence, it has been called the Portland vase.

Portland Vase.

86. *Where is now the Portland vase?*—It was deposited in the British Museum, 1810, where it remains, but is not now shewn to the public, in consequence of a person having mischievously broken it with a stone (1845). The vase, however, has been neatly repaired.

87. *Who was Josiah Wedgewood?*—He was an eminent English potter, born 1730, who introduced a high style in

the ceramic art in England. After an honourable and useful career, he died 1795.

88. *What is engraving?*—There are several kinds of engraving designed to represent pictures. Engraving on copper or steel plates consists in cutting lines on the metal—which lines being filled with ink (and the surface of the plate wiped clean), yield impressions on paper. This is called engraving in *intaglio*, an Italian term signifying 'to cut or carve in.'

89. *What is etching?*—It is a particular kind of engraving, in which an acid is employed to eat out or corrode lines in the metal plate.

90. *What is wood-engraving?*—It consists in cutting figures in relief on the surface of a smooth piece of boxwood, which figures, when inked (all the other parts of the surface being cut away), produce impressions on paper in the manner of a type.

91. *Is wood-engraving of old date?*—Yes; it began to be practised in Germany and other countries about 1400, or 30 to 40 years before the invention of printing. It was at first used for the purpose of stamping or printing playing-cards and figures illustrative of Scripture subjects.

92. *When were playing-cards invented?*—Cards are of ancient date in India and China, but differing from those now in use. The present kind of playing-cards became known in Italy in 1379, and soon afterwards spread over Europe.

93. *What was the 'Biblia Pauperum?'*—It was a species of Bible composed of pictures from wood-engravings, printed for the use of those who could not read. The name, *Biblia Pauperum*, signifies 'Bible for the Poor.' These picture-bibles were perhaps the very *first* books that were printed. Some are still preserved as curiosities.

94. *Who was Thomas Bewick?*—He was a celebrated wood-engraver at Newcastle-on-Tyne, born 1753, who revived this ingenious art, and executed engravings of animals with wonderful fidelity. The books on natural history which he illustrated are much prized. He died 1828.

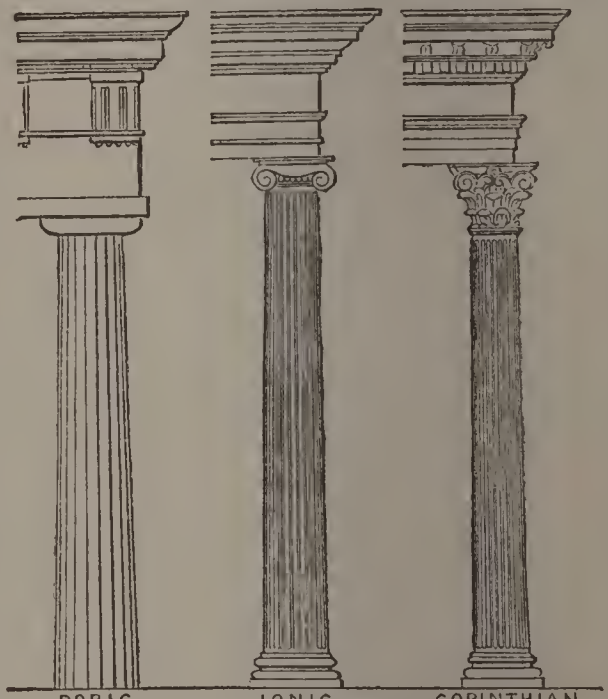
95. *Who was Sir Robert Strange?*—He was an eminent copperplate engraver, born in Orkney 1721. In consequence of having engaged in the rebellion of 1745 in Scotland, he went to France, where he acquired great fame for his fine pictorial engravings. Latterly, he returned to England, was knighted by George III., and died 1792. Strange's engravings of pictures by the great masters are now highly valued.

Architecture.

96. *What is Architecture?*—It is the art of building, and is of various kinds—such as civil, military, and ecclesiastical.

97. *Is architecture an ancient art?*—Yes; it was practised by very ancient nations, as is seen by remarkable remains in Assyria, Egypt, and elsewhere.

98. *What is meant by 'Cyclopean' architecture?*—It is a name ordinarily applied to walls of great antiquity built of huge blocks of stone without cement, from a notion that they were the work of the fabled Cyclopes, or one-eyed giants, mentioned by Homer. Cyclopean walls are found in various parts of the world, and antiquaries are at a loss to say by whom they were executed. They date at least 1000 years B.C.



Styles of Architecture.

99. *From whom did the Greeks acquire a knowledge of architecture?*—From the Assyrians and Egyptians, on whose forms and styles they greatly improved.

100. *Into how many styles is Grecian architecture divided?*—Into three—the Doric, Ionic, and Corinthian. Of these the Doric is the oldest and most simple, while the Corinthian is the most florid and ornamental.

101. *To what was the cultivation of Greek architecture due?*—To the encouragement given to the building of temples for the gods, for which this species of architecture was best suited—being elegant, formal, massive, and producing a grand effect in white marble, of which the buildings were chiefly constructed.

102. *When was Greek architecture in perfection?*—From about 650 to 300 B.C. The most noted of the Greek architects was

Phidias, in the age of Pericles; and the most magnificent of his structures was the Parthenon at Athens.

103. *Were the Greeks acquainted with the principle of the Arch?*—It is thought that they could not be ignorant of the arch, for it was employed by the Egyptians and Assyrians; but they did not practically adopt it. In no Grecian building were there any arches.

104. *What were Caryatides?*—They were figures of females which, in place of columns, supported entablatures or roofs of buildings. They take their name (according to Greek tradition) from the women of Caryæ, who were made captives after the battle of Thermopylæ, for having sided with the Persians; the story being that figures resembling them in costume, styled *Caryatides*, were, as an indignity, introduced as columns by Praxiteles and other Athenian artists.

Caryatides.

105. *What was the character of Roman architecture?*—That of Greek models, with Tuscan and Composite. It attained to great magnificence in the age of Augustus, but degenerated and decayed under the lower empire.

106. *Did the Romans adopt the arch in architecture?*—Yes; they employed it in their bridges, aqueducts, and other structures, and from them the knowledge of it was communicated to Western Europe.

107. *Who was Vitruvius?*—He was a celebrated Roman writer on architecture, and flourished about 30 B.C. He wrote an elaborate work on architecture—*De Architecturâ*—which remains an important authority on the subject.

108. *What was a Basilica?*—Basilica is the Latin form of the Greek *Basilike*, 'belonging to a king;' the term was originally applied to the court where the king or chief-magistrate administered justice.

109. *Describe a Roman basilica.*—It consisted of a long hall, with side-aisles; these side-aisles being separated from the central space by pillars supporting the roof. At the further end, opposite the entrance, was a raised platform, with seats for the judges, to accommodate which there was sometimes a rounded space projecting from the end, called the *apse*.

110. *What did the Roman basilicas generally become?*—On the introduction of Christianity, they were generally transformed into churches. The apse became the choir or site of the altar, and the central open space for the worshippers was

called the *nave*, a term taken from *navis*, Latin for a ship. Thus, the rudimentary type of modern cathedrals was the Roman basilica, or court of justice.

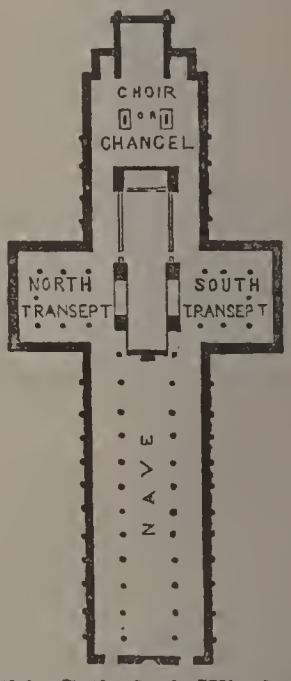
111. *What were the kinds of architecture which followed the Greek and Roman?*—The Byzantine, Saracenic, Gothic, Renaissance, and other kinds, according to national tastes.

112. *Mention a characteristic of Byzantine art.*—One of its main peculiarities was an adaptation to Christian, as opposed to heathen, wants; for example, the Byzantine architects, about the commencement of the 6th century, began to construct churches expressly for Christian worship. These buildings are characterised by the use of the dome in their roofs, and by splendid mosaic work.

113. *Mention a grand specimen of Byzantine architecture.*—The church of St Sophia at Constantinople, completed 537 A. D. St Mark's, at Venice, a creation of the middle ages, is also considered a pure specimen.

114. *Mention a characteristic of Saracenic architecture.*—A remarkable feature consists in arches resembling a horse-shoe, or wider above than below. The Saracenic style is invariably used in Mohammedan mosques, and a beautiful example is found in the Alhambra, the palace-fortress of the Moors in Granada.

115. *What is Gothic architecture?*—Under this title are comprised the various styles of architecture which prevailed in Western Europe during the middle ages till the revival of classic architecture in the 16th century. In the Gothic was perfected the structure of the cathedral, which was usually shaped like a cross.



Gothic Cathedral, Winchester.

116. *Describe the parts in a Gothic cathedral?*—The central part forming the limb of the cross, was the nave, the projecting parts at the sides were the transepts, and the extension of the nave beyond the transepts formed the choir or chancel.

117. *What was the form of the arch in Gothic architecture?*—Till about 1150 the semicircular form (or Norman style) was used; thereafter the arch was pointed, but in different degrees. The early English Gothic is called the first pointed style, of which the most perfect example is Salisbury Cathedral, finished about 1260.

118. *Mention a characteristic feature of the Norman variety of the Gothic.*—The leading feature was the rounded arch. From a general misapprehension, this style has sometimes been called the *Saxon.* It is now known that such specimens as existed among the Anglo-Saxons, previous to the Conquest, were copied from designs in Normandy.

119. *What is Elizabethan architecture?*—It is a mixed style which sprung up on the decline of Gothic architecture. It is chiefly exemplified in mansions of the nobility erected in the reigns of Elizabeth and James I., and is characterised by oriel windows, pointed gables, and fanciful spires. The Tudor style preceded the Elizabethan.

120. *What was the Renaissance?*—The French term Renaissance signifies a new birth or renewal, and is applied to the revival of art and literature in Italy and France in the 16th century.

121. *What was characteristic of Renaissance architecture?*—A renewal of the Roman or classical style down to the minutest details. To the Renaissance may be ascribed the best of our modern street-architecture; for instance, that of Paris.

122. *Who was Palladio?*—He was an eminent Italian architect (born 1518, died in 1580), who, after studying the works of Vitruvius, was largely employed in erecting palaces for the nobility at Vicenza, according to the style of the Renaissance. What is now called the Italian style of architecture, adopted for handsome buildings in cities, is based on the finer compositions of Palladio, Alberti, and others.

123. *What is the Scottish style of architecture?*—It is a fanciful style adapted for country mansions, and dates from the 15th and 16th centuries; its characteristics are sharp roofs and gables with picturesque flanking turrets; the style evidently marks a transition from the feudal castle to the modern family residence.

124. *Who was Inigo Jones?*—He was an eminent English architect, who was employed in various undertakings by James I. His best known work is the Banqueting House, Whitehall. Jones has been called the English Palladio; he died at an advanced age, 1653.

125. *Who was Sir Christopher Wren?*—He was the greatest

of all the English architects, and was born in 1632. His grandest work was St Paul's Cathedral, London, begun 1675. Wren was, besides, the architect of many of the fine churches in London. He died 1723, at the advanced age of 91, and was honoured with a public funeral in St Paul's.

126. *What is the inscription on the tomb of Sir Christopher Wren?*—It is, *Si Monumentum quæris, circumspice*—If you wish to see his monument, look around.

127. *Who was Sir William Chambers?*—He was an eminent English architect in the 18th century; his best work is Somerset House—a noble specimen of modern architecture; he wrote a *Treatise on Civil Architecture*, which is a text-book on the subject.—Died 1796.

128. *Who was John Rennie?*—He was an eminent engineer; born, the son of a farmer at Phantassie, East Lothian, 1761. Rennie was particularly distinguished for his grand bridges, two of which, across the Thames, were Waterloo Bridge, finished 1817, and London Bridge, opened 1831. Canova considered Waterloo Bridge to be the finest in the world; and M. Dupin calls it 'a colossal monument worthy of Sesostris and the Cæsars.' Rennie died 1821.

129. *What is a 'ground-plan?'*—It is a horizontal section of a building, as it is to be shaped on the ground. The 'elevation' represents the exterior front of a building as it is to appear to the eye when completed.

130. *Mention some of the parts of a building?*—*Rybats*, the stones composing the sides of doors and windows; *plinth*, the

Pediment of the Temple of Ægina (restored).

square base for a column or wall; *architrave*, the flat stretch of stone immediately over columns, and extending from one to another; the *frieze*, the flat stone over the architrave; the *entablature* comprises the architrave, frieze, and cornice; *pediment*, the triangular form over the entablature. The triangular space within the pediment is the *tympanum*. In Greek buildings, the tympanum was usually enriched with sculptured figures.

131. *Is Grecian architecture adapted for modern house-building?*—No; It is too precise and formal, and cannot endure the slightest departure from classic models. Hence the introduction of more pliant styles in recent times.

Music.

132. *Was music known to the ancients?*—Yes; the Egyptians, Hebrews, Greeks, and Romans had each a kind of music, adapted for the voice, or for stringed and wind instruments.

133. *What musical instruments had the Hebrews?*—We learn from the Scriptures that they had trumpets, shawms, harps, and cymbals; the shawm was a wind instrument resembling a modern clarionet.

134. *What is the Gregorian Chant?*—It is the name given to certain choral melodies introduced into the service of the early Christian church by Pope Gregory the Great, who flourished towards the end of the 6th century. In this and other respects Gregory was the first great improver of church-music.

135. *What is the 'Dies Iræ?'*—It is a celebrated Latin hymn, sung in the services of the Roman Catholic Church, and is generally known by the first two words *Dies Iræ*, signifying 'Day of wrath.' It is of medieval composition, and its author is doubtful; though Thomas of Celano (died 1255) has probably the best claim to the honour.

136. *Describe the nature of the 'Dies Iræ.'*—It is a hymn or poem on the Last Judgment; and on account of the solemn grandeur of the ideas which it brings before the mind, and emotions it is fitted to excite, it is well adapted for the musical part of divine service.

137. *What is the 'Stabat Mater?'*—It is a very sublime Latin hymn, which is sung in the services of the Roman Catholic Church in Holy-Week. The author is unknown, but many modern musical composers have employed their talents on this beautiful piece.

138. *Why has the hymn 'Stabat Mater' been so called?*—Because it begins with these two words—*stabat*, stood, and *mater*, mother. The following are the first three lines—

'Stabat mater dolorosa,
Juxta crucem lachrymosa,
Dum pendebat filius'—

which may be translated, 'The afflicted and weeping mother stood by the cross on which was hanging her son.'

139. *Who have been the great musical composers of modern times?*—They have been principally Germans—Bach, Handel, Haydn, Mozart, Beethoven, Weber, and others. Handel, born 1684, spent most of his life in England, and was perhaps

the greatest of all musical composers; his most famous compositions are *Israel in Egypt* and the *Messiah*.—Died 1759.

140. *What is an Oratorio?*—It is a composition of sacred music; the term being from the Latin word *oratorium*, an oratory or cell for prayer—the place where such sacred compositions were originally performed. The music consists of recitatives, airs, duets, trios, quartetts, and choruses, accompanied with instruments. Handel's *Israel* and *Messiah*, Mendelssohn's *Elijah* and *St Paul*, and Haydn's *Creation* are the grandest specimens of this species of composition.

Handel.

141. *What is an Italian 'Opera?'*—It is a musical drama—a play sung throughout by the actors; the music in such compositions is designed to evoke emotions characteristic of the different parts—sorrow, joy, anger, and other sentiments, expressed in musical sounds.

142. *What composers are at the head of the Italian opera?*—Rossini (born 1792), who wrote *Semiramide*, *Guillaume Tell*, and *Il Barbiere di Seviglia;* Bellini (died 1835), the composer of *Norma*, *I Puritani*, and *La Sonnambula;* and Donizetti and Verdi.

143. *Who was Mendelssohn?*—Felix Mendelssohn (born 1809, died 1847), was a young German musical composer of great eminence; besides his splendid sonatas and concertos, he composed some fine tunes for lyrics—the best known of these being the air, *O wert thou in the Cauld Blast*, adapted to the words of Robert Burns.

144. *Who was Meyerbeer?*—He was an eminent German musical composer, born 1794. His best known operas are the *Huguenots*, *Robert le Diable*, the *Prophète*, and *L'Africaine*.—Died 1864.

145. *What is a Pibroch?*—It is a piece played on the Highland bagpipe; a pibroch illustrative of a battle is supposed to embrace the cries of defiance, the onset, the shouts of victory, and the wail for the dead and dying.

146. *What is an 'Anthem?'*—A species of composition peculiarly English, and introduced into the church after the Reformation. The words are taken from Scripture, and the music may be for solo, sol, or chorus, or a combination. The

term anthem is sometimes loosely applied to the national hymn, *God Save the Queen*.

147. *Who was the author of the English national anthem?*—The author of the words of *God Save the King* (or Queen) was Dr Henry Carey, born in London about 1696, and died 1743. The composition was in honour of a birthday of George II. The words of the anthem have undergone some changes since. The music was by Dr John Bull.

148. *What is Rule Britannia?*—It is the name of a noble national hymn, the words of which first appeared (1740) in the masque of *Alfred*, the joint production of James Thomson, author of *The Seasons*, and David Mallet. Whether Thomson or Mallet was the author, is not quite settled. The music is by Dr Arne, an eminent English musical composer (died 1778).

149. *What is Yankee Doodle?*—That is the name of an air, adopted as a national tune by the United States. The words are mere doggrel. *Yankee Doodle* was composed by Dr Shackburg, a physician in the British army in America, about 1755, and palmed off by him as a celebrated air on a body of American militia.

150. *What is the Marseillaise?*—It is a French revolutionary song or hymn, the words and music of which were composed by Rouget de Lisle, an officer of artillery at Strasbourg, in 1792. In July that year it was introduced into Paris, when the young men of Marseille were summoned to the capital; taking its name from them, it became exceedingly popular among all classes of revolutionists.

151. *What is the Ranz des Vaches?*—It is the French name of a class of wild and simple airs, played on the kuh-horn, and sung by the herdsmen in the Alpine parts of Switzerland, in driving the cattle to pasture.

152. *What is meant by 'national music?'*—It is that which grows up with certain national peculiarities of musical structure; thus the Italians, Germans, French, Irish, Scots, and Welsh, have each a distinct music. The English, however, scarcely possess a music distinguishable by peculiar national qualities.

153. *What is the nature of Scottish music?*—It is simple, partly plaintive and partly lively, adapted for lyrical compositions, and characterised by the infrequent use of semitones. Many of the Scottish airs are several centuries old; but few of their authors are known. With from time to time new words, they form a rich national inheritance enjoyed freely by successive generations.

The British Constitution—Jurisprudence.

1. *What is the nature of the British government?*—It is a limited monarchy, with a hereditary sovereign, who reigns according to certain restrictions prescribed by the constitution. In its present form, the constitution dates from the Revolution Settlement, 1689.

2. *What is the 'Cabinet?'*—It consists of a number of ministers, who are intrusted by the sovereign with the executive part of the government—the sovereign (whether king or queen) ruling only through them and by their advice. All executive acts proceed in the name of the sovereign.

3. *What regulates the sovereign in the choice of ministers?*—The sovereign selects or employs only such statesmen to act as ministers as possess the confidence of the two houses of parliament. Usually, the process of selection is left to one termed *prime* minister, and no one can long act as prime minister who cannot ensure majorities in parliament to carry government measures.

4. *Does government, then, rest substantially with the Houses of Parliament?*—It does; and chiefly with the House of Commons, which originates and finally determines all measures for granting supplies of money to carry on public affairs.

5. *What ensues when the prime minister fails to secure majorities in voting money bills or other important measures?*—Either the ministry must be dismissed, and a new ministry appointed, or the sovereign must dissolve the House of Commons, and cause a new one to be elected.

6. *What is the Privy Council?*—It is an assembly of advisers on matters of state appointed by the sovereign, and is composed principally of the cabinet ministers, along with certain judges, members of the nobility, and commoners. Immediately on the decease of the sovereign, the Privy Council proclaims the successor.

7. *What are 'orders in council?'*—They are orders having the effect of law, which the Privy Council is authorised by statutes to issue in cases of national emergency.

8. *What is the Nobility?*—The nobility and peerage are a body of individuals raised by rank, dignity, and title above the mass of the people or commoners.

9. *In whom lies the right of creating peers?*—The right of

creating peers is in the sovereign, who is 'the fountain of honour' in the constitution; but in this, as in other matters, the sovereign acts only by the advice of the ministry.

10. *On what ground are persons raised to the peerage?*—They are raised to the peerage for distinguished public services. The aristocracy, therefore, is constantly receiving accessions from the people, while the people are as constantly absorbing back into their ranks the junior branches of the nobility and their descendants.

11. *How many ranks are there in the peerage?*—Five; namely, Baron, Viscount, Earl, Marquis, and Duke, which is the highest. Peers are raised from lower to higher ranks—still, however, retaining the lower titles and dignities.

12. *Is the peerage hereditary?*—Yes; rank and title, along with family landed possessions, are inherited by the eldest surviving son according to the rule of primogeniture—a term equivalent to 'first born'—unless there be some special provision to the contrary.

13. *Mention an effect of primogeniture?*—One of its effects is to give great stability to certain families of wealth and distinction, who from generation to generation impart the quality of steadiness and permanence to the national institutions.

14. *Do the younger children of a peer enjoy titles by inheritance?*—They do not; in law, they are commoners; but usually they enjoy certain titles by courtesy. Thus, the eldest son of a duke is called by his father's second title, until he succeeds to the family honours, and the other sons are called Lords by courtesy.

15. *What are the national distinctions in the peerage?*—There are English, Scotch, and Irish peers, also peers of Great Britain, and peers of the United Kingdom. These distinctions arise out of historical circumstances, and have no relation to place of birth; for example, an Englishman or Scotsman may be an Irish peer, and an Irishman may be a peer of Great Britain.

16. *Have these various peers equal parliamentary privileges?*—No; English peers, and peers of Great Britain and of the United Kingdom have a seat in the House of Lords. The Scots peers elect sixteen of their number to the House of Lords; and a new election of them takes place every parliament. The Irish peers, elect twenty-eight of their number to the House of Lords, and they sit for life.

17. *Can peers be representatives in the House of Commons?*—Only members of the peerage of Ireland can be so; besides being represented in the Lords, they can be representatives

for English boroughs or counties in the Commons. For example, Lord Palmerston, who belonged to the peerage of Ireland, sat in the Commons for an English borough. Sons of noblemen with courtesy titles are eligible as members of the House of Commons.

18. *What is the number of members in the House of Commons?*—The number is 658, who are partly elected by counties and partly by boroughs; several are also elected by universities. No one can vote at elections unless his name has been previously placed on a public register.

19. *What is the duration of parliament?*—The existence of a parliament is limited to seven years; but few parliaments last so long. A session of parliament is the period it sits annually, and ordinarily extends from February till July.

20. *What is the number of members in the House of Lords?*—The number is at present 454, consisting of certain royal princes, peers who enjoy the right by heritage, the Scotch and Irish representative peers, and certain lords spiritual.

21. *Are there not several Scots peers in the House of Lords, besides the sixteen representative peers?*—Yes; but only because they are at the same time peers of England, Great Britain, or the United Kingdom. For example, the Duke of Buccleuch sits in the Lords as Earl of Doncaster, in the peerage of England.

22. *What are lords spiritual?*—They are the archbishops and bishops of the church of England and Ireland. These may be described as an elective nobility, though they are not absolutely peers.

23. *What is the number of lords spiritual in the House of Lords?*—The number is 30, consisting of 2 English archbishops, 24 English bishops, 1 representative Irish archbishop, and 3 representative Irish bishops. The Bishop of Sodor and Man has no seat in the House of Lords, not being reckoned one of the English bishops.

24. *Why is the Bishop of the Isle of Man called 'Bishop of Sodor and Man?'*—The term Sodor is an abbreviation of *Sodorenses*, the Latinised form of Sudoreys, the bishopric of which was once associated with that of Man. These Sudoreys were the Hebrides, or Southern Islands—so called to distinguish them from the Orkney or Northern Islands. As the Hebrides are now included in the ecclesiastical system of Scotland, the term Sodor, as far as regards its original meaning, is merely titular.

25. *Who act as chairmen in the Houses of Parliament?*—The Lord Chancellor (who by present usage must have been a distinguished lawyer) presides in the House of Lords. The

House of Commons elects one of its members to preside, and he is styled 'the Speaker.'

26. *What is meant by the 'woolsack?'*—The woolsack is the seat of the Lord Chancellor in the House of Lords; it consists of a large bag of wool covered with red cloth, but though fashioned like a seat, is without back or arms. The woolsack is said to have had its origin in the circumstance of wool being anciently a staple article of produce in England.

27. *How does a proposed measure become law?*—The measure is first in the form of a 'bill,' which must pass or be sanctioned by the two Houses of Parliament, and also receive the royal assent, before it becomes law. When so passed and assented to, the measure is called 'an Act of Parliament,' or statute.

28. *What are the means provided by the constitution for a redress of grievances?*—The constitution gives the right of petitioning parliament for the abolition or amendment of any objectionable law—which right includes the important privilege of assembling peacefully to consider and draw up the petition. This is deemed one of the great bulwarks of civil liberty in the British dominions.

29. *Does government interfere in elections?*—No; government, and all government officials whatsoever, usually abstain from interfering in elections, by which great liberty of action ensues. This is one of the most estimable points in the constitution. Government similarly abstains from attempts to regulate public opinion on matters of general policy—a circumstance which contrasts favourably with the practices that prevail in some continental countries.

30. *Is monarchy esteemed as a national institution?*—It is exceedingly so, for several considerations—1. Its great antiquity and identification with national traditions; 2. A knowledge of the disasters and contentions which ensued on its temporary overthrow in 1649; 3. A belief that, as now constitutionally established, it is best adapted to secure public liberty, along with exemption from the exasperations and conflicts of party; and, 4. A deep-seated sentiment of loyalty and affectionate regard for the sovereign who now occupies the throne.

Crown.

31. *What is a 'Coronation?'*—It is a ceremony in which the sovereign is solemnly invested with a crown, significant of royal dignity and authority.

32. *How is the term, 'the crown,' figuratively employed?*—The term is often used to signify the royal authority. Thus, people speak of 'crown lawyers'—meaning lawyers who act for the sovereign—and also of 'appointments by the crown.'

33. *What is the scale of precedence?*—It is a scale established by statutes and ancient usage determining the social position of every individual from the sovereign downwards—an arrangement by which all contests as to precedence are avoided on the occasion of state or public ceremonials. The number of ranks in the scale of precedence is upwards of a hundred; in this scale wealth is not reckoned.

34. *Who are entitled to the distinction of Esquire?*—The sons of the nobility and their eldest sons, the eldest sons of knights and their eldest sons, judges, justices of peace, commissioned officers, barristers, persons so styled in writs of the crown, and some others. 'Esquire' has latterly been so much abused that it has lost its distinctive value. The term is from the French *escuyer*, a shield-bearer (Lat. *scutum*, a shield), and was applied to the armour-bearer of a knight.

35. *What is the constitution of the Church of England?*—It is a Protestant Episcopacy, comprehending three orders of clergy—bishops, priests, and deacons; the whole under the Queen as 'head of the church.' The Archbishop of Canterbury is styled Primate of all England, and has the privilege of placing the crown on the head of the sovereign at coronations.

36. *How is the Church of England supported?*—It is established by law as the religion of the state, and is supported by a variety of endowments, for the most part of old date.

37. *What is a 'congé d'élire?'*—It is an old French phrase, signifying 'leave or permission to elect.' It is the name given in England to a warrant from the sovereign, permitting the dean and chapter of a cathedral to elect a bishop to a vacant see. The *congé d'élire*, however, is accompanied with a missive, pointing out who should be elected, which it is illegal to disregard.

38. *What is 'Convocation,' as applied to the Church of England?*—Convocation is the name given to an assembly of the clergy, which occasionally meets to discuss ecclesiastical questions. This meeting, however, possesses no power of legislation; for the church is entirely regulated by parliament, while its discipline belongs to a class of tribunals called the ecclesiastical courts.

39. *What is meant by 'Holy Orders?'*—It is a phrase in

use among members of the Church of Rome and Church of England, and denotes entrance into the order of the priesthood. Holy orders are conferred by a solemn act of ordination by bishops, and invest the recipient with a sacred character distinctly apart from the laity.

40. *Is the sacred character of Holy Orders indelible?*—It is so in ordinary circumstances. In the Church of Rome, the pope has the power of removing the sacred character of a priest and restoring him to the laity; in the Church of England, an act of parliament would be required to do so. Accordingly, persons who have entered holy orders in England are in point of law ineligible for various civil offices, including that of a representative in the House of Commons.

41. *What is meant by 'benefit of clergy?'*—It is an expression referring to a former state of the law in England, when a clergyman had the benefit of being exempted from prosecution for alleged crimes and offences before any civil tribunal. In course of time, laymen who could read claimed and were allowed the like privilege. 'Benefit of clergy' was finally abolished in the reign of George IV.

42. *What is the constitution of the Church of Scotland?*—It is a Protestant Presbyterianism, established in place of Episcopacy in 1690; but with certain modifications, it was the form of Protestantism instituted at the Reformation in Scotland. Its ministers are equal in rank, and are assisted in maintaining church-discipline by lay-elders.

43. *How is the Church of Scotland supported?*—It is, like the Church of England, maintained by endowments, mostly of old date—certain landowners in each parish being under a legal obligation to pay a specified stipend to the minister out of church-property in their possession.

44. *What is the General Assembly?*—It is the highest church-court in Scotland, composed of a certain number of representative ministers and elders, and meets once a year in Edinburgh. The crown appoints a president, called a Royal Commissioner, but he takes no part in the proceedings; the acting president is one of the representative ministers, elected by votes of the members, and styled Moderator.

45. *What are Dissenters?*—They are bodies of Christians who dissent from the form of government and doctrines of an Established Church. All dissenters, of whatever denomination, enjoy entire freedom of opinion, and conduct divine service according to the forms of which they approve.

46. *What are Seceders?*—They are certain religious bodies in Scotland who have seceded or separated from the Established Church, and are legally in the position of dissenters. The chief seceding body is the *United Presbyterian*, which has been formed by the amalgamation of different sects at different times. The *Free Church*, constituted in 1843, declines in theory to consider itself a 'seceding' body—designating the event of 1843 not a secession but a *disruption*.

47. *What is Erastianism?*—It is a term of reproach, signifying the condition of a church which is under the control of the state. It is derived from Thomas Erastus, a learned Swiss theologian (died 1583), whose writings on this subject, however, have been greatly misapprehended.

48. *What is international law?*—It is a generally understood body of principles which regulate the intercourse between different states, and have been expounded by various writers.

49. *Mention some authorities on international law.*—Puffendorf, Grotius, and Vattel are the principal; Vattel, a native of Neufchatel (died 1767) is the chief authority; his famed work on the subject is his *Droit des Gens* (Law of Nations).

50. *What is a 'casus belli?'*—It is an act of hostility on the part of one nation against another, sufficient to give occasion for a proclamation of war.

51. *What are belligerents?*—They are states which are carrying on war against each other, according to the ordinary recognised principles of warfare; the term is from the Latin *belligero*, I wage war.

52. *What is the right of blockade?*—It is a right possessed by each belligerent to close the ports of the enemy against traffic with neutral powers; but to be effectual, the ports must be actually closed and guarded by war-vessels, not merely declared to be so.

53. *What is 'contraband of war?'*—It consists of warlike materials supplied by neutrals to a belligerent, contrary to the conditions which should regulate national intercourse in a time of war.

54. *What are prisoners of war?*—They are soldiers and others taken captive in war; according to civilised usages, the lives of prisoners of war are spared on surrendering, and the captives are restored to liberty on the occurrence of peace.

55. *What is 'martial law?'*—It is the law of military force, which is brought into operation when, for some reason, the civil law is suspended. A town in such a state of riotous

disorder as to be beyond the control of the civil authorities, may be legally placed for a time under martial law.

56. *What was the Roman civil law?*—It was a great body of Roman laws affecting rights and relationships among individuals, which was digested into a code by Justinian about the middle of the 6th century.[1]

57. *In what language was the code of Justinian drawn up?*—The whole was written in Latin, and now forms a huge volume, under the title *Corpus Juris Civilis* (Body of Civil Law). After being lost during the commotions of the middle ages, a solitary copy of this great digest was found at Amalfi, in Italy, 1137, and was forthwith studied by modern nations.

58. *Did many modern nations embrace the Roman civil law?*—Yes; it became the basis of municipal law in most European countries—some adopting it more than others.

59. *Have continental nations adhered to the Roman law?*—They have done so only to a limited extent. It has been generally superseded by an entirely new digest, called the *Code Napoleon*, framed by orders of Napoleon Bonaparte, between 1803 and 1808. A number of the provisions of the *Code Napoleon*, however, are drawn from the Roman law.

60. *What was the 'Canon Law?'*—It was a body of laws and regulations affecting the Roman Catholic Church, and originated in ecclesiastical decrees from the beginning of the 4th to the end of the 12th century.

61. *Of what did the canon law treat?*—It treated of benefices, the lives and conversation of clergymen, matrimony, divorces, and other matters falling within the scope of church-discipline.

62. *Is the Canon Law still in operation?*—Yes; in Roman Catholic countries, though modified by modern legislation, and by 'concordats' or agreements with the pope.

63. *What kind of law prevails in the United Kingdom?*—It is law of a very miscellaneous kind; England and Ireland have nearly one species of law, and Scotland has another; but a number of statutes apply to the three countries.

64. *Explain the nature of the English law.*—It consists mainly of statutes passed from time to time by the legislature, and of what is called 'common law'—that is, certain rules of old standing, as expounded by legal authorities. But to these two varieties is added a species of canon law, drawn from the ancient ecclesiastical law in use before the Reformation.

[1] See *Historical Questions*, p. 62.

65. *We hear of 'law and equity;' what is meant by 'equity?'* —By 'equity' is signified those principles of justice which are not reached by any statute or rule of common law, and require to be dealt with separately. For this branch of jurisprudence there are special courts in England.

66. *Mention two of the principal law-courts in England.*— The Court of Common Pleas, and the Court of Queen's (or King's) Bench.

67. *What are the Equity Courts in England?*—The Lord Chancellor's Court, the Master of the Rolls' Court, and the Courts of the three Vice-Chancellors.

68. *What is meant by 'oyer and terminer?'—Oyer* and *terminer* are words from the French, signifying 'to hear and determine;' the phrase is usually applied to certain special courts held for the purpose of trying persons accused of seditious and treasonable practices; but all commissions from the crown to judges to hold courts of justice are, strictly speaking, of the nature of 'oyer and terminer.'

69. *Who was Sir Thomas Littleton?*—He was one of the judges of the Court of Common Pleas, 1466, and was celebrated as the author of a work on *Tenures*, useful for lawyers.

70. *Who was Sir Edward Coke?*—He was an eminent lawyer in the reigns of James I. and Charles I., who filled the office of Chief-Justice of the Court of King's Bench; he is remembered as the author of a minute and laborious Commentary on the work of Sir Thomas Littleton, usually styled *Coke upon Littleton*, which remains a leading authority on English law.

71. *Who was Sir William Blackstone?*—He was a learned judge in the Court of Common Pleas, who died 1780. Blackstone is best known for his *Commentaries on the Laws of England*, a work first published in 1765, which, from its tasteful and popular style, has been often reprinted.

72. *What law prevails in the British colonies?*—Where the colonies are of British origin, the law and legal usages of England prevail. Where the colonies or dependencies are of foreign origin, the law of the original settlers is, by stipulation, for the most part maintained. For example, in the Cape of Good Hope, which was originally a Dutch colony, the old Dutch (or Roman civil) law prevails.

73. *What law prevails in India?*—Several kinds of law are maintained in that great dependency, in order to suit the habits and usages of a mixed population. For the aboriginal Hindus there is the Hindu law; for the Mohammedans, the

law of the Koran ; and for British settlers, the law of England. Judges are appointed to administer these diverse laws.

74. *What law prevails in Scotland?*—The old Roman civil law, modified by modern statutes, and a common law of native growth.

75. *Mention a work in which the law of Scotland is embodied.*—The best known work on the subject is Erskine's *Principles of the Law of Scotland*, published in 1754, which remains a valuable text-book.

76. *What is the supreme civil court in Scotland?*—It is the Court of Session, which comprehends jurisdiction in cases of equity as well as law.

77. *What is the supreme court of appeal in the United Kingdom?*—It is the House of Lords, to which cases may be appealed for decision from the chief civil courts in England, Ireland, and Scotland. The Judicial Committee of the Privy Council forms a court of appeal from the colonies and dependencies.

78. *Who appoints the judges in the different courts throughout the United Kingdom?*—Excepting as concerns certain 'duchies palatine,' all judges are appointed by the crown, and hold office for life.

79. *What is a 'duchy palatine?'*—It is a division of country formerly under the distinct government of a duke or other powerful feudal lord. The duchy of Lancaster is an example.

80. *When was the duchy of Cornwall created?*—It was created in 1377, in favour of Edward the Black Prince, and by act of parliament, remains under the jurisdiction of the Prince of Wales, as hereditary Duke of Cornwall, who appoints the judges in the duchy, and draws from it certain revenues.

81. *What is the legal position of the duchy of Lancaster?*—That duchy was forfeited to the crown in the reign of Edward IV. The crown now appoints a Chancellor to the duchy as a removable minister, by whom an attorney-general, and other functionaries are nominated, with equity jurisdiction.

82. *What is 'trial by jury?'*—It is the trial of alleged criminals by a jury or body of individuals impartially selected, according to prescribed forms, from the community. The duty of the jury consists in determining whether the facts charged against a prisoner are proved.

83. *Is trial by jury of ancient origin?*—Yes ; it is an Anglo-Saxon institution, and forms an important safeguard against arbitrary authority.

84. *Is trial by jury conducted uniformly in the United Kingdom?*—No; in England and Ireland, a jury on a criminal case consists of 12 individuals, who must be unanimous in their decisions. In Scotland, the jury consists of 15, a majority of whom decides.

85. *What is the 'grand jury?'*—It is a body of individuals summoned by sheriffs in different localities to determine whether cases of alleged crime may be brought to trial. The institution of grand jury, however, does not exist in Scotland, where its duties as respects criminal charges are performed by a public prosecutor, styled Lord Advocate, who is assisted by various 'Deputes.'

86. *Is trial by jury employed in civil cases?*—Yes; it is applied in connection with the chief civil courts in the United Kingdom, principally in relation to questions of damage for alleged injuries.

87. *What are 'Procurators-Fiscal?'*—They are public investigators and prosecutors of crime in Scotland, connected with county and civic jurisdictions, and are subordinate to the Lord Advocate. The term 'fiscal' is from the Latin *fiscus*, signifying the crown exchequer.

88. *What is a diplomatist?*—The term signifies one who conducts negotiations between sovereigns; this duty, formerly assigned to heralds, is now committed to ambassadors and special envoys. The term diplomatist is from *diploma*, which is derived from a Greek word signifying 'double or twofold. Anciently, a folded-up letter was called a diploma, and hence *diplomatist* was applied to one who received a folded paper of instructions.

89. *What are Mercantile Consuls?*—They are officers subordinate to ambassadors, whom the state maintains in foreign countries for the protection of its trade and vindication of the rights of its merchants. A consul is expected to render friendly aid to every subject or citizen of the country for which he acts. A consul is not necessarily a native of the country from which he is deputed.

90. *What is meant by the 'exequatur of a consul?'*—The term *exequatur* ('let him execute') is applied to a written recognition of a consul who has been deputed by a foreign country, and authorises him to execute his assigned duties. This exequatur or recognition issues from the crown; in the event of war with the country for which the consul acts, his exequatur is withdrawn.

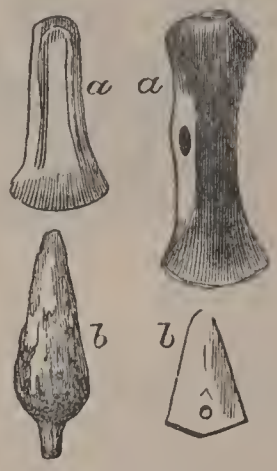
Concluding Miscellaneous Questions.

1. *What is Archæology?*—It is the branch of knowledge embracing objects of ancient art, also ancient languages, manners, inscriptions, books, monuments, and institutions—all, indeed, that can throw light on the early history of the world. The term is from the Greek *archaios*, ancient; and *logos*, a discourse.

2. *Is the study of archæology of modern date?*—It always attracted more or less attention; but it is only in recent times that men of learning have devoted themselves to studies of this kind in a scientific and critical way, either as regards the continents of Asia, Africa, America, and Europe, or the British islands.

3. *What have been the grander objects of archæological inquiry in Northern Africa and Asia?*—The pyramids of Egypt, and the gigantic stone figures of Assyria; regarding these many interesting discoveries have been made in recent times by English and French archæologists.

4. *What is the 'Rosetta stone?'*—It is a celebrated slab of stone of a dark colour found at Rosetta, in Egypt, bearing an inscription in three varieties of character—the ancient hieroglyphic, the popular character of the country, and the Greek.



a a, Axe-heads.
b b, Arrow-heads.

5. *What has rendered this stone a subject of interest?*—Interest in the Rosetta stone is derived from the fact that its triple inscription afforded a key to hieroglyphics; when the idea was arrived at, that the three inscriptions were repetitions of each other, it of course became easy, through our knowledge of the Greek, to interpret the other two.

6. *Who made this discovery?*—Champollion, an eminent French archæologist; the Rosetta stone is now in the British Museum, and casts from it are common.

7. *What is meant by the 'Stone, Bronze, and Iron Ages?'*—According to the theories of certain archæologists, there was a period in which weapons were made of stone; this was followed by a period in which weapons were of copper;

and lastly, there was a period when weapons of iron came into use.

8. *Where are stone and copper weapons to be seen?*—They may be seen in museums, and consist chiefly of arrow-heads and axes. They are supposed to be very ancient—probably three to four thousand years old.

9. *Mention some of the more notable of the very ancient antiquities in the British islands.*—Cromlechs, barrows, cairns, Druidic temples, crannoges, and hill-forts—all dating from a period previous to the occupation of Britain by the Romans.

10. *What is a cromlech?*—It consists of several large stones set upright, with one or more stones laid across the top, forming a kind of table. Cromlechs are seen in France as well as England; they are believed to be sepulchral memorials or tombs.

Stonehenge.

11. *What are barrows?*—Barrows are heaped tumuli or mounds of earth, generally conical, and, in some instances, cover interior erections of stones resembling cromlechs. It is thought that open cromlechs had once been so covered up, and that the earth has been washed or worn away in the course of ages.

12. *What are cairns?*—They are large heaps of stones forming conical mounts, and were probably intended to be commemorative of some distinguished hero or remarkable event.

13. *What is the form of Druidic temples?*—They consist of circles of huge stones, with, in some instances, stones of equally large dimensions laid from the top of one upright stone to the top of another. The grandest antiquity of this kind in England is that at Stonehenge, in Wiltshire, a few miles from Salisbury.

14. *Why are these stone circles called Druidic temples?*—Because it has been thought they were used as temples in the pagan worship of the Druids—a priesthood among the early Britons and Gauls. But there is no absolute certainty on the subject.

15. *What were crannoges?*—They were artificial islands, fortified, in lakes, where families lived secure from attack. Remains of these very ancient and curious lake-dwellings are found in Ireland, Scotland, and Switzerland.

16. *What were British hill-forts?*—They were circular or oval intrenchments of earth and stones, erected generally on the tops of hills of moderate elevation, and used as places of defence previous to and at the Roman invasion.

17. *What is the shape of Roman camps?*—They are usually in the form of a square or parallelogram, with several raised mounds or intrenchments and intervening ditches, and they cover a considerable space of ground. They had four entrances, one on each side. One of these entrances, called the Prætorian Gate, led to the tent of the commander, which was styled the *Prætorium*.

Round Tower (Devenish, Ireland).

18. *What are 'Round Towers?'*—They are tall, narrow towers of masonry several stories in height, found chiefly in Ireland. They are believed to date from the 5th to the 12th century, and to have been used as belfries to churches, as well as safe receptacles for the church vessels in times of civil disorder. Much has been written regarding them.

19. *When were the old castles erected which are now seen in ruins?*—The greater number in England and Scotland were not erected till after the Norman conquest; the feudal keeps or peel-houses on the Border were, for the greater part, erected from the 14th to the 16th century.

20. *What is Heraldry?*—It is the branch of knowledge connected with armorial bearings, with which heralds are presumed to be acquainted. Armorial bearings are of ancient origin, but they acquired a systematised form in England only about the time of Henry III., or end of the 13th century.

21. *What are armorial bearings?*—They are figurative marks of distinction assigned to individuals by certain courts

appointed by the sovereign—the Heralds' College in England; the College of Arms in Ireland; and the Lyon Court in Scotland. Armorial bearings are usually styled 'coats of arms.'

22. *Of what does a coat of arms consist?*—In the highest class it consists of a shield with supporters, and a crest, along with a motto; but only members of the peerage, or those particularly qualified, are entitled to use supporters.

23. *What is the nature of the shield?*—It is a triangular figure with the point downwards, and its tinctures and emblematic devices are some way significant of the family history of the individual bearing it.

24. *What are the tinctures in heraldry?*—They are as follows: gold, which is termed *or;* silver, termed *argent;* fur, termed *vair;* and red, blue, black, green, and purple, known as *gules*, *azure*, *sable*, *vert*, and *purpure*. The surface of the shield is called 'the field.'

25. *What were the supporters in the royal arms previous to the union of the crowns?*—They were for England two lions; and for Scotland two unicorns.

26. *What were the supporters to the royal arms of Great Britain after the union of the crowns?*—They consisted of a lion on one side, and a unicorn on the other. According to the present legalised usage, the lion occupies the right or dexter side; sometimes, in Scotland, the unicorn is authorisedly placed on the right side, as in judicial seals.

Ancient Royal Arms of Scotland.

27. *What was borne on the shield in the royal arms previous to the union of the crowns?*—In England, the shield bore three lions, *passant* (walking), on a field *or;* in Scotland, one lion, *rampant* (standing on its hind-legs), *gules*, on a field *or*. Scott, in his *Marmion*, alludes to the royal banner of Scotland, on which

'The ruddy lion rampt in gold.'

28. *How is the royal shield of the United Kingdom now quartered?*—It bears the three lions of England in the first and fourth quarter, the lion of Scotland in the second quarter, and the harp for Ireland in the third quarter—the whole significant of the union of the several countries under one sovereign.

29. *What is Lloyd's?*—It is an establishment at the Royal

Exchange, London, where a body of subscribers receive intelligence concerning shipping, and where the insurance of vessels at sea is undertaken by capitalists engaged in this kind of business, styled *underwriters*. This great marine establishment has agents at nearly all the seaports in the world.

30. *From what does Lloyd's take its name?*—It is named from one Lloyd, who kept a coffee-house in Abchurch Lane in 1710, the business of which was afterwards transferred to the Royal Exchange. The establishment is now purely commercial.

31. *What is 'Numismatics?'*—It is the science which treats of coins and medals; the term is from the Greek *nomisma*, 'money issued by lawful authority'—the root of the word *nomisma* being *nomos*, 'law.'

32. *What is the origin of the word 'pecuniary?'*—It is from the Latin *pecunia*, money; the root of the word pecunia was *pecus*, 'cattle'—cattle having constituted the wealth of the early Roman people.

33. *What is the origin of the word 'money?'*—It is from the temple of Juno *Moneta*, in which money was coined by the Romans. *Mint*, or place of coinage, has the same root.

34. *What is meant by 'sterling?'*—It signifies money of the legalised standard coinage of the United Kingdom.

35. *Explain the origin of 'sterling.'*—The term *sterling* is believed to be a corruption of *Easterling*—a person from the continent, and therefore from the east, in relation to England. The Easterlings were ingenious artisans who came to England from Germany in the reign of Henry III. to refine the silver money; and the coin they produced was called *Moneta Esterlingorum*—the money of the Easterlings.

36. *What is the origin of the word 'cash?'*—The term *cash*, signifying ready money, is from the French word *caisse*, a chest or place in which money is kept. The apartment in a French bank in which cash is paid is called the *caisse*. Such an apartment in an English bank is called the *telling-room*.

37. *What is the origin of the word 'pound' in money?*—The term *pound* was originally employed to signify a pound-weight of silver, which was divided into 20 parts or shillings; and 20*s*. still continue to be called a pound, although their weight has been gradually so much diminished, that it now takes 66 of them to make a pound-weight.

38. *What is the origin of the word 'shilling?'*—Some connect it with the Swedish *skilja*, to divide; but it is more

probably a corruption of the Latin *solidus*, the name of a coin in ancient Rome, and also in the middle ages.

39. *What is the origin of the word 'guinea?'*—Guinea took its name from the coast of Guinea, in Africa, whence the gold for it was originally brought. The guinea is not now coined, but the term still indicates 21*s*.

40. *What is the origin of the word 'penny?'*—It is thought by some to be connected with the Lat. *pendo*, to weigh, or to pay, and at one time was used for money in general, as in the phrase 'a good pennyworth.' The penny is a very old coin in England, and was originally of silver, being the 240th part of a pound-weight; the fourth part of a penny was called by the Anglo-Saxons *feorthung*—hence farthing.

41. *What was a 'groat?'*—It was a silver piece equal in value to fourpence, coined in England until after 1351. The name *groat*, which signifies 'great,' is thought to have been given to it from its value, as compared with a penny.

42. *What is meant by the 'pillar dollar?'*—The pillar dollar is the name familiarly given to the old Spanish dollar in consequence of bearing a representation of two pillars, with the inscription *Plus Ultra*, 'more beyond'—meaning that Spain owned possessions beyond the 'pillars of Hercules,' or mountains at the Straits of Gibraltar. The allusion was to the Spanish American colonies.

43. *What is a 'piece of eight?'*—It was the name once popularly given to the Spanish dollar, in consequence of comprehending eight reals.

44. *What is a cent?*—It is a copper coin of the United States, the hundredth part of a dollar, and is named from the Latin *centum*, a hundred; in value, it is nearly the same as an English half-penny.

45. *What is a rupee?*—It is a coin in use in India, value two shillings; the name is a corruption of the Sanscrit *rûpya*, from *rûpa*, shape, and is said to have been given from the first coins having had the shape or figure of a man impressed on them. A *lac* of rupees is 100,000.

46. *What are 'bills of exchange?'*—They are written obligations to pay certain sums of money at a specified time, and are a ready and convenient means of settling commercial debts. The person who signs a bill, as undertaking the obligation to pay, is called the *acceptor*.

47. *What is meant by 'rate of exchange' between two countries?*—If the merchants of one country have to pay to another country more money than they receive in return, they

experience a corresponding difficulty in buying bills to transmit to their creditors, and the rate of exchange is against them.

48. *Give an example.*—A merchant in America who wishes to send a bill of exchange for £100 to a merchant in England, may have to pay £120 to a bank for it. In this case, the excess of £20 is the rate of exchange in favour of England.

49. *What is the 'Stock Exchange?'*—It is a resort in London where brokers buy and sell portions of the government stocks; these stocks are certain parts of the national debt, which are ordinarily spoken of as the *funds.* By these dealings, the claims on the nation are constantly shifting hands.

50. *What are 'consols?'*—The term *consols* is applied to a particular kind of government stock, composed of various stocks (properly different borrowings by government), which have been *consolidated* into one.

51. *What are 'joint-stock undertakings?'*—They are large commercial enterprises, in which a number of persons join together, each putting in a certain amount of money, by taking shares, to commence and carry on the concern. The aggregate amount of the shares forms the 'capital stock' of the company.

52. *What is 'par?'*—Par is the original value of a share. If the share be £10, that sum is par; if, from prospects of high profit, the £10 share sells for £12, then the share is £2 above par; if, from apprehensions of a small profit, it is saleable for only £8, then the share is £2 below par. All that is above par is called *premium;* all that is below is termed *discount.*

53. *What is meant by 'the currency?'*—The currency is the money of various kinds passing from hand to hand. It consists of gold, silver, and copper coins, called the *metallic* currency; and bills of exchange, bank-notes, and other instruments of exchange, known as the *paper* currency.

54. *What is a Bank-note?*—It is the written promise of a bank to pay to the bearer a certain expressed sum in the standard metal currency on demand. If the bank fails to fulfil its promise, the note immediately sinks in value, and may become absolutely worthless. By no law or contrivance can the nominal value of bank-notes be sustained if the holders have not perfect confidence in getting the expressed sum on presenting the notes at the bank where they are issued.

55. *What is 'Political Economy?'*—It is the science which explains the principles of national wealth; the great and illustrious expounder of this science was Adam Smith in his work,

The Wealth of Nations; but only in recent times have the principles of the science been embraced in England, and many countries still reject them.

56. *What is the law of 'demand and supply?'*—It is one of the leading laws or principles of political economy, by which the whole world is furnished with the necessaries of life, each person according to his means.

57. *Explain the law of demand and supply.*—If there be a general demand for an article, it will be supplied, merely from the desire for gain. If the demand exceed the supply, prices will rise; if the supply goes beyond the demand, prices will fall. Such, in ordinary circumstances, is the sole principle that regulates prices, and also wages.

58. *What is 'monopoly?'*—Monopoly is a term from the Greek, signifying the sole power of dealing in a particular article; an exclusive right of this kind tends to render the article dealt in not only dear, but of a poor quality.

59. *What is meant by a protective policy in trade?*—It means a system of legal obstruction to the importation of certain goods into a country, in order to give a monopoly to the native producers of such goods—the professed aim of a policy of this nature being to encourage the growth of native manufactures.

60. *What ensues from a protective policy?*—The result is, that the public are compelled to buy dear instead of cheap goods; thus losing money for the presumed advantage of a few, the purchasers are unable to buy as many things as they would otherwise like to do, and, accordingly, trade generally is made to suffer. In plain language, protection in trade is little better than public robbery.

61. *What is 'free trade?'*—It is freedom of import and export, by which trade adjusts itself between different countries, and every one is left 'to buy in the cheapest and sell in the dearest market.' This is now recognised as a sound principle in political economy, and the only one consistent with national advantage.

62. *What is 'contraband trade?'*—It is an irregular trade carried on contrary to law; usually, it consists in introducing goods illegally and secretly into a country, in order that they may escape the duties chargeable upon them. Persons engaged in this clandestine trade are called 'smugglers.'

63. *What is meant by social amelioration?*—It signifies an improvement in the habits, feelings, and condition of the people generally. History points out the progressive stages of social

amelioration—great advances having been lately made, chiefly by means of education in its elementary and higher branches.

64. *What is a College?*—The term *college* is from the Latin *collegium*, signifying a collection or assembly. It is sometimes applied to associations of clergy, lawyers, physicians, and others, but most commonly it means a body of teachers or professors, and sometimes graduates, incorporated for the promotion of certain branches of learning, and who live together in the same building.

65. *What is a University?*—The term *university* is from the Latin *universitas*, in its sense of a corporation. A university may comprehend and have authority over several distinct colleges; and such is frequently the case, as at Oxford, Cambridge, and some other places. The university of France is an institution comprehending all the colleges in that country.

66. *What is meant by a 'learned faculty?'*—It is the term applied to the teachers (as a body) of a particular kind of learning, such as those of law and medicine. The term faculty is from the Latin *facultas*, strictly signifying a power of doing anything.

67. *How are the branches of learning in a university classified?*—They are ordinarily classified into four faculties—arts, divinity, law, and medicine.

68. *What branches are comprehended in the faculty of arts?* Latin and Greek languages, Mathematics, Logic, Natural and Moral Philosophy, History, Rhetoric, and Belles-Lettres, Astronomy, and some other branches.

69. *What branches are comprehended in the faculty of divinity?*—Divinity, or Theology; the study of the Scriptures, historical and critical; Hebrew, and, in a general sense, the learning especially required by clergymen.

70. *What branches are comprehended in the faculty of law?*—Classes for instruction in the different kinds of law required by legal practitioners; also medical jurisprudence.

71. *What branches are comprehended in the faculty of medicine?*—Anatomy, Practice of Physic, Clinical Surgery, Pathology, Materia Medica, Botany, Chemistry, and various other departments.

72. *What is meant by Rhetoric?*—Rhetoric is a term from the Greek, and signifies the art of speaking with propriety and oratorical effect—the science of eloquence.

73. *What is meant by Belles-Lettres?*—The term *Belles-Lettres* is French, signifying literally *fine* or *elegant writings;* but it is

commonly applied to the art of literary composition in the different departments of poetry and prose.

74. *What is Pathology?*—A knowledge of the causes and character of diseases; so called from the Greek *pathos*, suffering, and *logos*, a discourse.

75. *What is Hygiene?*—It is the art of preserving health; the term is from *Hygicia*, the goddess of health in the Greek mythology.

76. *What is meant by Therapeutics?*—It is from the Greek word *therapeuo*, I cure, and signifies the application of medicines and other means of curing diseases.

77. *What is Surgery?*—The art of healing diseases by instruments, the medical practitioner who does so being called a *surgeon;* this word surgeon, however, is a contraction of the older term *chirurgeon*, which is from two Greek words signifying *hand* and *work*, or work done by the hand.

78. *What is meant by 'clinical,' as applied to surgery and medicine?*—'Clinical' is from a Greek word signifying a bed, and is applied to those branches in the medical art in which instruction is given to students at the bedsides of patients. Hospitals and infirmaries are the great schools of clinical medicine and surgery.

79. *What is Materia Medica?*—It is the branch of instruction which treats of the nature and the action of medicines.

80. *What is meant by Pharmacy?*—It is the art of preparing and dispensing medicines. A book which gives directions for the preparing and compounding medicines is called a *Pharmacopœia.*

81. *What is Medical Jurisprudence?*—It is the application of medical and chemical science to the discovery of the causes of death under circumstances requiring legal investigation. For example—professors of medical jurisprudence are employed to examine the bodies of persons who are supposed to have been murdered by criminal administration of poisons.

82. *What is meant by the phrase 'vis medicatrix naturæ?'*—It signifies the natural power of healing in the animal system; for example, a cut in the finger will heal through a natural inherent power—the *vis medicatrix naturæ*—and, what we have chiefly to do, in the case of wounds, is to facilitate the operation of this beneficent power in nature.

83. *What is a degree in a college or university?*—The term 'degree' is from the Latin *gradus*, a step, and signifies an advance made by the student in certain branches of learning.

The conferring of degrees is one of the privileges of an incorporated college or university. The degrees best known are those indicated by A.M., master of arts; D.D., doctor of divinity; M.D., doctor of medicine; and LL.D., doctor of laws.

84. *Explain the meaning of the letters LL.D.*—LL.D. stand for *Legum doctor*, doctor of laws, the double L signifying that the word is in the plural—laws, in reference to the two kinds of law, the Civil, and the Canon or Ecclesiastical law. It is now, however, usually given as an honorary degree, or for eminence in science and literature generally, without any special reference to law.

85. *What is engineering?*—It is the art of designing and superintending the execution of large undertakings, such as roads, railways, canals, bridges, piers, docks, and water-works. Usually it is styled civil engineering, to distinguish it from military engineering, and from the making of steam-engines and other machinery.

86. *Mention two celebrated civil engineers in recent times.*—Thomas Telford, originally an operative mason in Dumfriesshire, who rose to distinction as constructor of the Caledonian Canal and other great works of public utility; died 1834. And Robert Stephenson (son of George Stephenson, improver of the locomotive), born 1803, eminent for his various railway works, also for constructing the tubular bridge across the Menai Strait; he died 1859, and was buried by the side of Telford in Westminster Abbey.

87. *What is meant by Æsthetics?*—It signifies the science of the beautiful, applied to painting, sculpture, music, and other fine arts, also poetry and the feelings. The theory of the beautiful has engaged much learned disquisition in ancient and modern times.

88. *What recent French writer has treated of the Beautiful?*—Victor Cousin, who rises to an apprehension of an ideal beauty whose realisation he finds in God—'God,' says Cousin, 'in whom is combined absolute unity with infinite variety, is necessarily the realised ideal of all beauty.'

89. *What are the famed lines of Keats on beauty?*—They are as follows:

> 'A thing of beauty is a joy for ever;
> Its loveliness increases; it will never
> Pass into nothingness.'

NOTE.—Extended information on scientific, biographic, and other subjects, will be readily found in *Chambers's Encyclopædia, a Dictionary of Universal Knowledge.*

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Edinburgh:
Printed by W. and R. Chambers.

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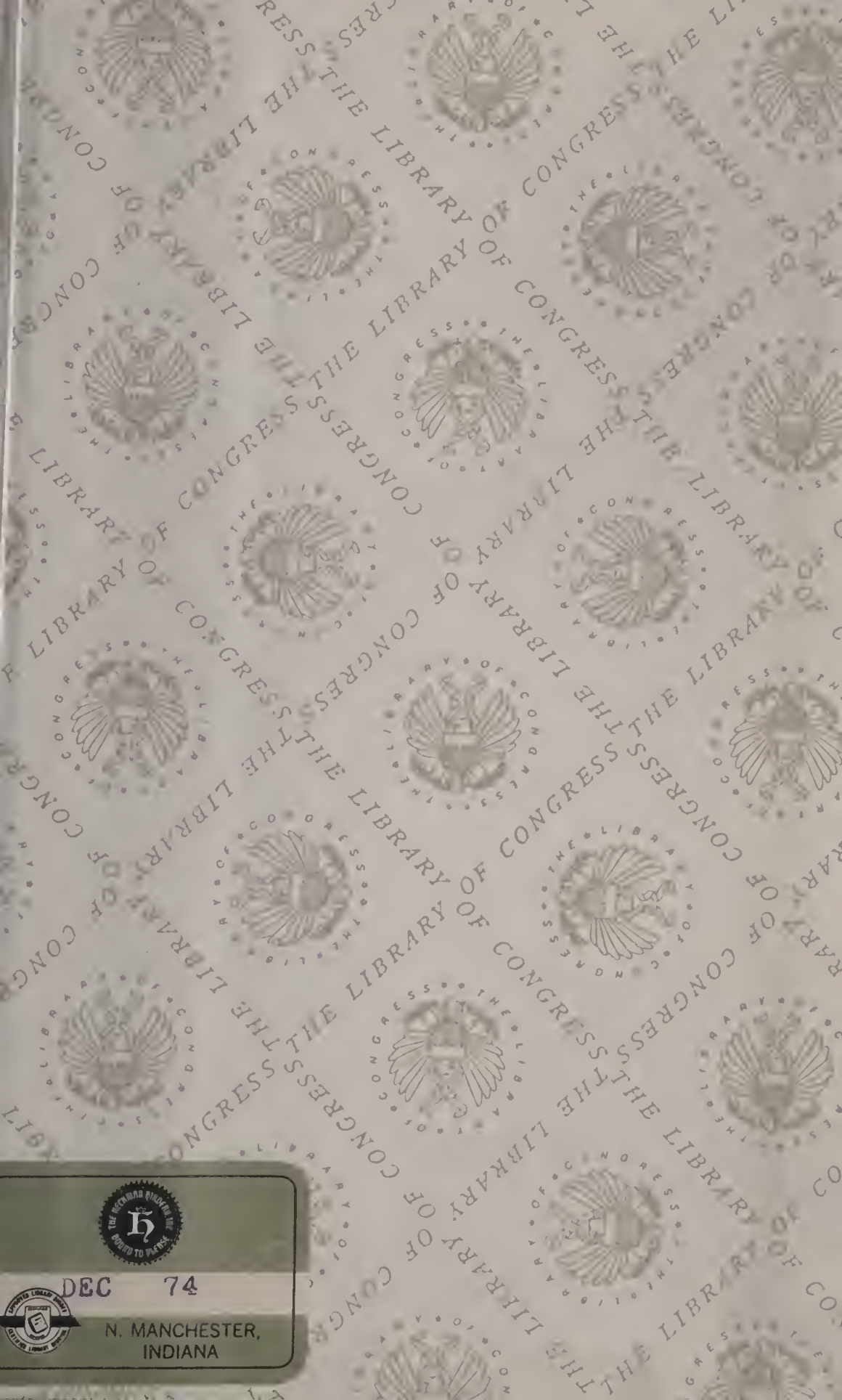

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